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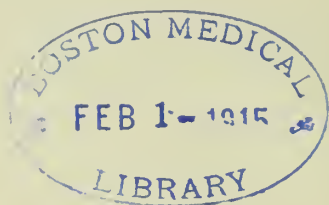
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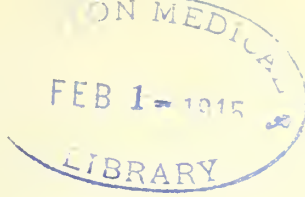
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ORIGINAL ARTICLES

A PIONEER MEDICAL SCHOOL*

CARL E. BLACK, A.M., M.D.
JACKSONVILLE, ILL.

Medicine is a very difficult and exacting calling, in that while one may not have a large clientele yet it consumes all the time. This is true of general practice and also of a number of the specialties. While the range of study in the science and art of medicine is so broad that no man could compass it all in a life-time, yet it is impossible to constantly pursue one line of study. Nor would it be best to confine one's thoughts and study constantly to scientific data or to the technical details of treatment. A variety in study will give far better results. One of the most enjoyable and at the same time most profitable avenues of thought and study, whether it be as a profession or as a recreation, is history. No other line of reading is so elevating as the well-told story of the life of successful men who have gone before and left us a record of their ambitions and their successes; their failure and their achievements.

There is far too little attention given to the history of our profession by its members. For these reasons I desire to relate something of what I have so much enjoyed finding out about a little pioneer medical school. It had ambitious teachers with fond hopes for the future. It was founded by those who had a care for the future, and a desire to serve. It has a place in the history of our nation, and our state, as well as in the pioneer community in which it was located.

A little more than a century ago the country of "The Illinois" was one of the world's waste places. Hardly had the Tory English been beaten back to the lakes by the pioneer army of George Rogers Clarke, and the fierce and dogged resistance of the Indians of the northwest territory been broken by the victorious host of "Mad" Anthony Wayne when the pioneer settler began to seek out the choice spots of prairie-

*Read before the "Society of Medical History" Chicago, Dec. 14, 1911.

bordered woodland for the building of his cabin home. Marquette and Joliet had visited the "Illini" country and in the name of their sovereign had taken possession and called it "New France," which act was confirmed by the historian and priest Hennepin, and the knightly adventurer and explorer La Salle. While the knights and scholars and priests of France and Spain were the first to view the rolling prairies, the flowing waters, the rich and varied woods with their sweet singing birds and teeming animal life, it was not the plan of destiny that their masters should be other than the temporary possessors of the beautiful valley of the Mississippi with its boundless but undeveloped resources.

Probably nowhere in the world has the three-fold conflict of national development been so clearly and beautifully illustrated as in the subjugation and settlement of the northwest territory. The first conflict was with the original inhabitants—the Indians. No settlers have ever met a fiercer and more brutal resistance than that of our American Indians. They were past masters in that murderous treachery which glories in striking the enemy in the back, and in the dark, and in murdering and scalping innocent women and children or, far worse, carrying them off into the horrors of captivity. The terrors of this conflict fill volumes of the most thrilling and oftentimes revolting chapters of early pioneer life. The solitary hunter killed while taking his noon-day drink at the spring; the traveler lured on to certain death by his concealed foe; the pioneer murdered in his field before the eyes of his wife and children; the soldiers led into ambush to be slaughtered and scalped—such were the victims of the stealthy foes of our pioneers.

Hardly less to be dreaded were the white foes; one race seeking by every means, fair or foul, to gain and hold the ascendancy over the other. The artful diplomacy of the French; the intrigues of the Spanish and the grasping avarice of the English constituted the hard school of early life in which the infant colonies of America were taught. It was not only a conflict of struggling colonies with foreign states, but often colony was set against colony. The disagreements of Virginia and Carolina between themselves, and with the national government, made the state of Franklin impossible, and almost allowed the separatists to carry Kentucky over to the intrigues of the Spanish. But the problems of subduing the redmen and appropriating their vast hunting grounds to a useful purpose and the task of overcoming our English and Spanish foes were simple compared with the problem of opening up the fields, cutting out the forests, building homes and towns, bridging the streams and overcoming the natural obstacles in the way of planting an enduring civilization in a new and wild country. Imagine the courage it must have required to accomplish the task of hewing out of the great prairies and forests skirting the streams of the hunting grounds of the "Illini" our present-day civilization, and you will have a faint conception of the giant fiber of our pioneer ancestors. They were unpolished, often uncouth, and sometimes harsh and even brutal, but always spurred on by a purpose to accomplish something enduring for the future. What they lacked in the education and polish of the schools was made up by the unshakable foundation of

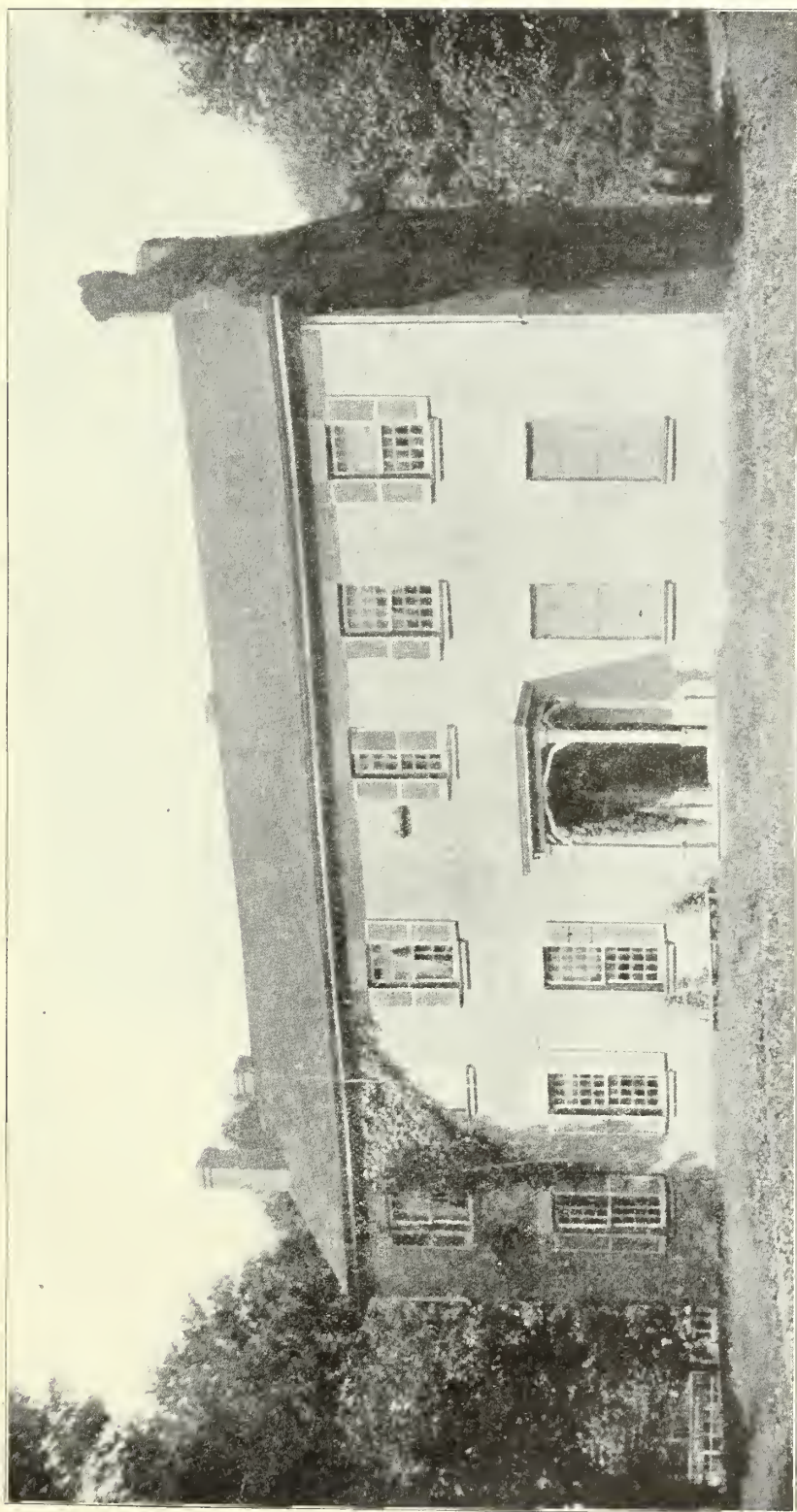


Fig. 1. "Old Beecher." The first college building erected (1829) in Illinois. Now used as a home for literary societies of Illinois College.

primary principles. They believed in the home and came to the new country to build and enjoy its privileges. They sought freedom and planted here the seeds of the most democratic of institutions. Few of the early settlers had the advantage of much "schooling" and yet all of our early laws and ordinances show the widespread belief in the necessity of general education as the basis of a free and democratic state. For this reason the few who were educated in the schools of the colonies, or foreign states, were appreciated to an unexpected degree.

We find in Morgan County (Illinois) that while most of the early settlers were offshoots from Kentucky, Tennessee, and the southeastern colonies, there was immediate recognition of the school training possessed by the college-bred men from the older colonies of the east.

The sound of the woodman's ax was still ringing out the blows to hew the logs for the settler's first cabin; the wolf, wild turkey and deer were to be seen from the cabin door; the prairie grass waved in the summer



Fig. 2. Showing Illinois College in the distance. Taken from an old Mitchell's Geography, used in the early schools of Illinois.

breeze, undisturbed by plow or fence; the Indian hunter in his dirty blanket and tawdy finery was a frequent visitor, when a consecrated band of Yale students first came to the "Illinois." When Illinois became a state in 1818 most of its inhabitants were south of the mouth of the Illinois River. The first settler in Morgan County did not build his cabin until the fall of 1819, and the county of Morgan was not organized until 1823. It was two years later before the group of cabins near the forks of the Mauvaisterre received a municipal identity as the town of Jacksonville. Yet in December, 1829, when the town had only 600 to 800 inhabitants, the scheme of the educational pioneer, Rev. John M. Ellis, was consummated by the christening of Illinois College and the opening of its first building—the first college in Illinois (Fig. 2).

This first building (See Frontispiece, "Old Beecher"), surrounded by seven other large buildings all fully equipped, still stands on its beautiful hill, in the midst of comfortable homes and overlooking a beautiful little city, although originally erected in the edge of a grove of natural forest and overlooking unending stretches of prairie. In January, 1830, the first class of nine students assembled on "the hill" and met the solitary instructor and all there was of the faculty—Rev. J. M. Sturtevant (Fig. 3).

What that teacher said to the assembled class on that memorable first morning when this college began work was typical of the spirit of the times, "We are here to-day to open a fountain where future generations may drink." The classes grew. The faculty grew. Ambition to provide education for our people ever led them on. Little more than ten years had passed when we find the Board of Trustees by formal action:



Fig. 3. Rev. Julian M. Sturtevant, President of Illinois College from 1844 to 1876.

Resolved, That departments of Law, Medicine and Theology be added to the existing departments of this institution, and that professors be appointed in these several departments as soon as shall be judged expedient.

Resolved, That the Prudential Committee, in connection with the Faculty, be a committee to report at the next annual meeting, a plan for carrying into effect the preceding resolution and that they be authorized in the meantime to take the preliminary steps necessary for the commencement of instruction, or the raising of funds if they shall judge it expedient.

In this language, and by the truly great and devoted pioneer educators represented in the board of trustees and faculty of this first college of Illinois, was conceived the first medical college. It was a noteworthy and a noble purpose designed to provide competent care for the sick and suffering of the infant state.

A peculiar feature of the settlement of this glorious free country was the almost universal determination toward future greatness. This was preeminently true of the settlers of the northwest territory. Naturally one of the first thoughts of the people was for proper care of their families when sick. They saw the necessity for competent physicians. There were only a few in the territory and these were much scattered and had to travel long distances to the sick and therefore could not render effective services. Consequently one of the first cares was the establishing of a medical school. Such an undertaking was made possible by such enthusiastic and broad-minded physicians as Dr. Samuel Adams and Dr. David Prince (see Figs. 4 and 5).

At the meeting of the Board of Trustees in June, 1842, "reports were made by the faculty on the subjects of medical and law departments in



Fig. 4. Dr. Samuel Adams, Professor of Chemistry in Illinois College and its medical department, 1843-8.

the college, which were read and referred to the prudential committee with full power to act in the premises as the interests of the college shall require." In June, 1843, on report of Dr. Adams of the faculty it was:

Resolved, That it is expedient to establish a Medical School in connection with this institution, to be under the control of the Trustees, and that immediate measures be taken to carry into effect a plan for the above object, provided the same shall be without expense to the College Treasury.

Resolved, That we now proceed to elect Professors to fill the following departments of instruction in said school.

1. Anatomy and Surgery.
2. Chemistry and Materia Medica.
3. Theory and Practice of Medicine.
4. Obstetrics and Diseases of Women and Children.

Resolved, That the faculty be authorized to make such regulations for the management of the Medical Department as they shall deem necessary.

Resolved, That the agent be authorized to lease to the Medical Department, such public rooms in the Chapel—including the north attic—as the Academical Faculty shall think can be spared from the purposes of the Academical Department.

It would seem from the terms of the above resolution that the business affairs of the medical school were kept entirely separate and that this department was not only required to pay its own way but to pay rent to the Literary College for the use of part of its rooms. The reference to the attic is suggestive of the study of anatomy and dissecting—a subject which played a very important part in the future relations of the medical school to the community. On account of its dissecting room and the necessity of securing anatomical material from the neighboring graveyards this school was literally a terror to the community, which stood



CAT.

Fig. 5. Dr. David Prince, Professor of Anatomy and Surgery in the Illinois College Medical School, 1843-8.

ready to hang the doctor to the nearest tree who was guilty of malpractice, and to lynch him if he took steps necessary to acquire a sufficient knowledge of anatomy to make himself proficient.

"The following persons were then elected to fill the several professorships above mentioned, viz.: anatomy and surgery, James Prince¹ of Quincy; chemistry, etc., Samuel Adams, M.D., Illinois College; obstetrics, etc., Henry Jones, M.D., Jacksonville. Theory and practice of medicine referred to the prudential committee to fill."²

(1) Undoubtedly this should be David Prince instead of James.

(2) The first announcement of the Medical School shows that the chair of the Theory and Practice of Medicine was filled by Daniel Stahl, M.D., of Quincy, who is described as a Hessian Jew. A short, stout man of quick, nervous movement and very lively and popular with the students. The catalogue also states

Thus after two years of maturing plans the medical department conceived in 1841 was born as an independent medical school, having all the dignities of its position. The first lectures began November 1, 1843, and continued sixteen weeks. The two years between the conception of the medical department and the birth of the medical school had not been idle ones in medicine. Adams, Jones and Prince had been busy teaching medicine and preparing students for the practice of their profession in these isolated and needy communities. Making the medical school a part of the college gave it degree-granting powers. The only instruction accorded to many of our pioneer doctors was to "ride with Prince or Jones," or some other philanthropic and conscientious physician. In the olden times it was considered a part of the duty of the doctor to "take a student." Much of their teaching was done systematically and thoroughly and contained an element of human worth often missed by the machine-made doctor of a later day. In Jacksonville in addition to riding with a preceptor the student had the advantage of the instruction of Dr. Adams in chemistry and materia medica even before the formal founding of the medical school, and some of the more ambitious ones put on the finishing touches by spending four or five months at a school in Cincinnati, Louisville or St. Louis and receiving a degree.³

that W. B. Herrick, M.D., of Chicago, was Professor of Surgical Anatomy and Surgery but Dr. Samuel Willard, a member of the first class, says that Dr. Herrick did not accept the appointment and never came to Jacksonville to lecture, and the course was given by Dr. Prince.

(3) MEDICAL COLLEGES ORGANIZED IN THE MISSISSIPPI VALLEY PRIOR TO 1845

- 1817. Med. Dept. Transylvania University—Lexington, Ky.
- 1819. Med. College of Ohio—Cincinnati.
- 1831. Med. Dept. University of Louisiana—N. Orleans, La.
- 1832. Worthington Med. Coll.—Worthington, O.
- 1835. Med. Dept. Willoughby University, Willoughby, O.
- 1836. Physio Med. Coll.—Cincinnati, O.
- 1837. Med. Dept. University of Louisville, Ky.
- 1840. Cincinnati College of Med. and Surg.
- 1840. Missouri Medical College, St. Louis, Mo. (Under Dr. McDowell).
- 1841. St. Louis Medical College, St. Louis, Mo. (Under Dr. Pope*).
- 1843. Med. Dept. Illinois College, Jacksonville, Ill.
- 1843. Rush Med. College, Chicago, Illinois.
- 1843. Med. Dept. West. Reserve University, Cleveland, O.
- 1843. Eclectic Med. Institute, Cincinnati, O.
- 1844. Ind. Med. College, La Porte, Ind.
- 1845. Med. School of University State of Missouri, Columbia.

*"The rivalry of Pope and McDowell and McDowell's coarse and ungentelemanly ways account for the two colleges in St. Louis of almost equal dates." S. W.

MEDICAL COLLEGES—U. S. AND CANADA, ORGANIZED IN 1844 OR PRIOR TO THAT DATE

- 1765. Dept. of Med., University of Penn., Philadelphia.
- 1766. Med. Soc. of N. J., 1866, authorized to give diplomas.
- 1782. Med. Dept. of Harvard University, Boston, Mass.
- 1797. Med. Dept. of Dartmouth College, Hanover, N. H.
- 1807. College of Phys. and Surgeons, N. Y.
- 1812. College of Physicians and Surgeons of the West Dist. of N. Y.
- 1818. Vermont Academy of Med., Castleton, Vt.
- 1819. Med. College of Ohio, Cincinnati.
- 1821. Med. Dept. Brown University, Providence.
- 1823. Med. Dept. University of Vt.
- 1825. Med. Dept. University of Va., Charlottesville.

The medical school had an attendance of fourteen students⁴ the first year and graduated six men with the degree of M.D. Evidently some of their students were at work in other departments of the school. Of the first class of fourteen, five graduated in 1845 and three did not receive their degree until 1846.

It will be noticed that after the name and residence of each student was given the name of the instructor under whom he received his preliminary medical education. These instructors were almost always active general practitioners who were not only busily engaged in caring for the sick of the sparsely settled communities, but were also putting forth their best endeavor to prepare a new generation of doctors to care for the rapidly growing settlements. This was no light task amid rides over bad roads, or no roads at all, to reach the cabins of the scattered settlers. The pioneer doctors deserve our praise for their goodness of heart and largeness of mind.

An ever present characteristic of the pioneer was a constant looking into the future. He lived and endured the hardships and privations of the present in order to prepare for the future. The shelter of tree boughs covered with skin or leaves was only used until the cabin could be raised; and the cabin served as the family home while the forest was cleared and the prairie fields were "broken up." As soon as prosperity came and a little money could be accumulated the cabin in turn gave way to the frame or brick house. Provision for education was the first step in all

-
1826. Med. School of the Valley of Va., Winchester.
 1826. Jefferson Med. College.
 1829. Med. Dept. State of S. C., Charleston.
 1832. Worthington Med. Coll., Worthington, Ohio.
 1836. Med. Dept. Willoughby University, Willoughby, O.
 1836. Physio-Med. College, Cincinnati.
 1839. Geneva Med. College, Geneva, N. Y.
 1839. Albany Med. College, Albany, N. Y.
 1840. Cincinnati College of Med. and Surgery.
 1840. Missouri Med. College, St. Louis, Mo.
 1841. Med. Dept. of University of City of New York.
 1841. St. Louis Med. College, Missouri.
 1843. Berkshire Med. Coll. (Williams College) Pittsfield, Mass.
 1843. Med. Dept. West Reserve University, Cleveland, O.
 1843. Eclectic Med. Institute, Cincinnati, O.
 1845. Med. School of University of State of Missouri, Columbia.

(4)

MEDICAL STUDENTS

Names	Residence	Instructor
J. G. A. Bernard.....	Payson	M. Shephard
Augustus F. Hand.....	Harrisburg, Vt.	Prof. Adams.
John G. Howell.....	Diamond Grove	Prof. Adams.
M. M. Hunt.....	Mission Institute	Prof. Princee.
A. B. Ireland.....	Tremont
H. K. Jones.....	Troy, Mo.	Prof. Adams.
H. M. Lyons.....	Jerseyville	Prof. Adams.
Daniel Pierson	Jacksonville	Prof. Jones.
G. V. Shirley	Jacksonville	Practitioner.
Jerome B. Tenny.....	Pekin	Prof. Adams.
Charles G. Terrell	Quincy	Prof. Princee.
Robert G. H. Ward.....	Nicholas Co., Ky.....
James B. Woodward	Jacksonville	Prof. Adams.
John W. Young.....	Beaver, Pa.	Prof. Adams.

the settlements to mark progress on the road to prosperity. The pioneer doctor was no exception to this rule of progress.

The midnight ride; the bridle path; the lonely cabin; the night vigil with the floor for the patient's bed as well as the doctor's chair; the scant remuneration and the life of consecrated service should draw out our greatest admiration, especially when we add to these the constant thought and care for the character and quality of their future physicians. Let us honor their precious memories and emulate their worthy examples.

The first catalogue of this first school contains many things of interest which show the trend and conditions of the time, the care for the future and the desire to do the best which the rough and undeveloped surroundings would permit. The first catalogue⁵ contained a full statement of the lectures, degrees and advantages of the school which had had a complete and active organization for one year.

The course of instruction was less than four months and was repeated each year to all the medical students. This was the plan followed by all American medical schools until the graded course of instruction was introduced at a comparatively recent date by Chicago Medical College. The student was supposed to be well prepared by his preceptor in the rudiments of medicine prior to entering the medical school.

The cost of tickets to the lectures seems very high considering the scarcity of money at that early date. It would be interesting to know whether these fees were always paid in cash or whether the trustees and faculty in the generosity of their hearts did not sometimes accept the

(5)

LECTURES

"The course of lectures commence annually on the first of November, and continues sixteen weeks. The cost of tickets for admission to the full course of Lectures is \$60.00; tickets for private dissections \$5.00; Graduation fee, including diploma, \$10.00.

N. B. Students preparing for a missionary life, and wishing to pursue medical studies for that purpose, are admitted to the lectures free of expense."

DEGREES

The following qualifications, and compliance with the following requisitions, entitle a young gentleman to the degree of Doctor of Medicine from the Institution.

1. He must possess a competent acquaintance with the Latin language, and a sufficient knowledge of all the usual branches of an English education.

2. He must have pursued a thorough course of study with some regular practitioner.

3. He must have attended two full courses of medical lectures, the last of which must be at this institution; *Provided*, however, that experience in the practice of medicine may be accepted in the place of one course of lectures.

4. He must pass a satisfactory examination in all the branches of medical study, before the Medical Faculty, assisted by a board of censors, annually appointed for that purpose by the Trustees.

5. He must publicly read and defend a dissertation on some medical subject.

N. B. This Institution does not require any definite term of study as a condition of graduation. A thorough knowledge of all the branches of medical science, whether acquired in a longer or shorter time, must, however, be exhibited at the examination.

Candidates for the degree of Doctor of Medicine are examined at the close of each course of lectures.

Degrees will be conferred at the close of the lectures, and at the annual commencement of the College on the last Wednesday of June.

product of the chase, the farm or the loom in lieu of cash. Dr. Willard says: "Many gave their notes." There was certainly considerable inducement for a medical student to develop missionary ambitions in order to avail himself of the free lecture privilege.

One reads with great interest the requirements for receiving the degree of M.D. They are full of a desire for a high quality of man from an educational point of view and yet are widely lacking in positive statements. The educational facilities of this rough and untamed country were very few and it would have been manifestly impossible to insist on anything like a uniform standard. In medicine, like everything else, a man was taken for what he hoped to be rather than for what he had already accomplished. We are acquainted with a medical man of this period—of international, professional and scientific reputation, and decorated with numerous honorary degrees by several prominent institutions, who never attended school to exceed three years, for the reason that there were few schools to attend, and little time to attend them. Every boy of the family, by the time he was of school age, had to go to work and "make a hand" in breaking the farm out of the forest or the prairie. Therefore while "two full courses of medical lectures" were offered and one course was required as the basis for the degree of M.D.,

ADVANTAGES

Belonging to the anatomical department is a very good cabinet of preparations, consisting of connected skeletons—separate bones of all the parts—complete preparations of the blood-vessels, nerves, muscles, genital organs of both sexes, organs of the voice, together with the more important anatomical plates of Bougery and Jacobs, and Weber's full size copperplate engravings.

The chemical department is amply supplied with apparatus for illustrating all the principles of Chemical Philosophy.

A full set of plates of Pathological Anatomy will be procured before the next course of lectures.

A superior set of apparatus and plates for illustrating Practical Obstetrics, is provided for that department.

There is a respectable Medical Library belonging to this Institution, embracing the best modern works upon the various branches of medicine. Students will also have access to the private libraries of the Professors, which contain the best medical periodicals in the French, German and English languages.

Arrangements are made for an ample supply of fresh subjects for the dissection from abroad, which will be furnished at cost to private classes.

In order to impart practical instruction in the examination of patients, in the use of the stethoscope, and in other matters of practical importance, the Professors of the Theory and Practice of Medicine, and of Surgery, will be ready on Monday and Tuesday of each week to attend at the dispensary such patients as can be taken to the college, giving advice and performing operations gratis, before the class.

In addition to the regular course of lectures, a course of instruction will be continued through the year to those students who may find it to their advantage to remain on the ground. Medical students will have the opportunity of pursuing any study they may choose with the college classes, and of attending the lectures on Natural Philosophy and Natural History. The philosophical apparatus is one of the best collections in the United States, having been obtained at Paris, at great expense. The price charged for admission to a course of lectures, on the above subjects, is only \$2.50.

N. B. It is recommended to students to come supplied with text books in the various departments of study.

yet there was an *N.B.* to the effect that "this institution does not require any definite term of study as a condition of graduation." All that was really required was a knowledge of the subject. This was beautiful simplicity compared with the large bolts of red tape which must now be unwound in some of our states prior to receiving the degree of M.D., and a license to practice. Few things could be more interesting than the statement of the "advantages" offered by the institution. The skeletons, anatomical preparations and anatomical charts are suggestive of the meager equipment of medical books and charts then attainable. The illustrated medical book of our day was yet unborn. Certainly the facilities of a medical college of three rooms and four professors seems to us to present very meager advantages when compared with the modern medical school with its graded course of instruction and its hundred or more instructors; its ten or fifteen laboratories; its great clinics in charge of specialists and its great library. Yet we see in the statements of the catalogue of this early school, the first rays of light of a university with its interchange of courses and reciprocity in study.

Medical books must have been very difficult to obtain, as a note in the catalogue mildly suggests that the student come "supplied with text-books." Few medical books had yet been published in America by American writers. England and France must furnish most of those required; and St. Louis, a hundred miles away, was the nearest point at which they could be obtained.⁶ Nor could one "run down on the morning

BOARD, RENT, ETC.

Board may be obtained at the college boarding-house for \$1.50 per week, if paid in advance. Twenty or thirty students can be accommodated with rooms in the college buildings, or in houses near the college premises, at a low rent, by sending in their names before the first of October next. Preference will be given those who apply first.

Board, and rooms ready furnished, may be obtained in the village of Jacksonville, at from \$2.50 to \$3.50 per week. Students may save more than half the expense of board by taking a plain fare at their rooms.

N. B. Applications for rooms, and letters of inquiry may be addressed to Samuel Adams, M.D., Jacksonville, Ill.

The following note on dissecting is by an early student of the medical department of Illinois College who read this paper:

"This does not agree entirely with what you said before about raids on graveyards. But every corpse for dissection was taken from a barrel, sure, dripping with alcohol. What I may happen to know about how some bodies got there is neither to be printed nor written."

(6) Dr. Samuel Willard says, "The statement about medical books in America is erroneous. As early as 1840 Lea and Blanchard, and Lindsay and Blakiston, both of Philadelphia, not to mention other publishers, had republished the greater portion of valuable English Medical books. I had a bulky volume, a translation of Cruveilhier's Anatomy, and I used the Dublin Dissector, both American editions. Dr. O. W. Holmes in 1857 or 1858 in Atlantic Monthly speaks of the young doctor with his books in "peppered sheepskin" (L. & B.'s special form of binding). When I took my degree in 1848 I had these books: Wilson, Anatomy; Carpenter, Physiology; Cruveilhier, Anatomy; Dublin Dissector; Ferguson, Practical Surgery; Druit, "Modern" surgery; Watson, Practice of Medicine; Wilson, Principles of Medicine; Pereira, Materia Medica; 2 vol. Graham, Chemistry; Smith, Minor Surgery; Bartlett, Diagnosis; Stille, Principles, etc.; Marshall Hall, Practice; Macartney, Inflammation; Williams, The Eye and Its Diseases; West, Diseases of Children. Perhaps I have forgotten one or two. It would have been easy to have quadrupled my library with excellent medical works at that time."

train" and be back before supper, but must either ride twenty-five miles to the river and then go 100 miles by boat or make the whole journey on horseback or by wagon.

Notwithstanding the scarcity of money and the limited resources of these pioneers, the price of board was fully as high as it is at present in communities of the same number of inhabitants.

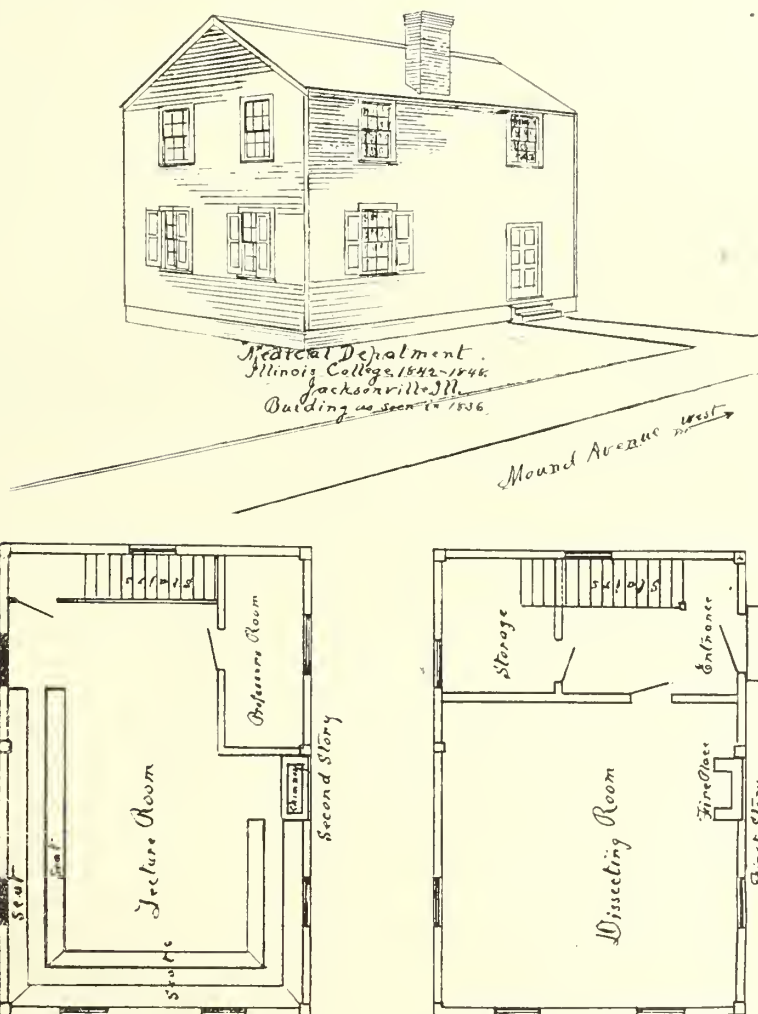


Fig. 6. An outline drawing of the Illinois College Medical School, made by Mr. John Bowen, who now occupies the building, which has been remodeled into a residence. The drawing was made from instructions by Dr. Samuel Willard, (a), the building. (b) First floor with entry hall, storage room and dissecting room. (c) Second floor with lecture room and Professor's room.

The first year of the medical school seems to have been regarded by the trustees as a success, for we find at their next regular meeting that

"Professor Adams made his annual report on the state of his department which was read and accepted, and referred to Messrs. Baldwin, Kirby and Lippincott." It being represented to the board that further accommodations for the medical department are indispensable to its success, it was ordered that the whole subject of providing such accommodations be referred to the prudential committee with a request that they will act on it as soon as possible" (Fig. 6).

While the order on the trustees' records does not mention a special medical building, it is learned from those who attended that department that the "medical hall" was built about this time (July 1844) and occupied by the medical department during the rest of its life. This building was a frame of rather cheap and unpretentious construction. It had two stories with two rooms each. The first floor had a small laboratory and clinic room and a large dissecting room, and the second floor had a small room for the professors and a large room where the lectures were given. This was the only building of the college group which was frame. It would be interesting to know how the money was raised to pay for this building, and why it was not paid for out of the funds raised by the trustees. It is not beyond the imagination that some of the generous medical men who gave freely of their time for instruction, also gave of their cash for this building.

The following order passed at the same meeting of the board gives some idea of the relation of the medical department to the college. It also gives the first board of censors:

Ordered that the president of the college may permit medical students of good moral character to occupy vacant rooms in the college building on condition that such students shall pay rent and incidental charges at the same rate as other students and provided also that medical students so occupying rooms be under the same regulations with reference to religious exercises as other students.

Ordered that no student of college be permitted to attend any of the medical lectures except that the members of the senior class shall be permitted to attend the course of lectures on anatomy by paying into the college treasury the sum of four dollars for the course. The following gentlemen were appointed censors for the medical school, vis.

Doc. English, Prosser & Read of Jacksonville.
Doc. Chandler of Panther Creek.
Doc. Brown of Waverly.
Doc. James of Alton.
Doc. Todd of Springfield.
Doc. Samuel of Carrollton.
Doc. Morrison of Carrollton.
Doc. Lewis of Chatham.
Doc. Rawlston, Quincy.

The catalogue announced in 1845 the teachers of the previous year excepting Dr. Stahl of Quincy. Dr. Henry Jones took up the chair of materia medica and therapeutics instead of obstetrics and diseases of women and children which was left vacant, as was also the chair of the practice of medicine. A footnote said "The blanks in the medical depart-

ment will be speedily filled and the names announced in the medical circular to be issued in the spring."⁷

It is evident that the medical school found considerable difficulty in securing the services of competent teachers. Few of the physicians of the day had the education necessary. Many who had sufficient education were in the new country for purposes of speculation rather than to practice their profession. They were following the mirage of "get rich quick schemes."

For some reason, not plain after this lapse of time, the trustees found it desirable to omit in the second catalogue the first requirement for degree as quoted from the first catalogue. This referred to "a competent acquaintance with the Latin language, etc." Probably the pioneers who were building their new civilization under new conditions did not feel the same love and necessity for the dead Latin as a ladder to the science and practice of the healing art as those of the older colonies, who were more bound by the traditions of the old world teachings.

The catalogue of January, 1845, stated the "N.B. A separate announcement of this department will be published in the spring when further particulars will be stated." Five students were graduated in 1845 with the degree of M.D.⁸

At the meeting of the trustees in June, 1845, "a communication from the faculty of medicine recommending the honorary degree of doctor in medicine be conferred on N. Ralston of Quincy, J. B. Samuel of Carrollton, and Horace A. Ackley, Professor of Surgery in Cleveland Medical School, was read and considered and it was thereon voted to confer the degrees as recommended." Drs. Ralston and Samuel had previously served the college on its board of censors, which board in the undeveloped

(7)

MEDICAL STUDENTS

Names	Residence	Instructors
W. H. Chapman.....	Jacksonville	Prof. Jones.
C. C. Emerick.....	Jersey Prairie	E. J. Dunlap, M.D.
Wm. H. Greene.....	Marine	P. P. Greene, M.D.
Augustus F. Hand.....	Jacksonville	Prof. Adams.
N. Hunt	Mission Institute	Prof. Prince.
A. B. Ireland	Tremont	D. Wheeler, M.D.
S. M. Jones.....	Exeter	H. M. Stuart, M.D.
W. M. Lawrence	Fulton, Mo.	R. O. Blakey, M.D.
.....	Prof. Adams.
D. H. McCord	Greenville	E. C. Park, M.D.
Daniel Pierson	Jacksonville	Prof. Jones.
Dr. G. Y. Shirley	Jacksonville
Elias Smith	Jacksonville	Prof. Adams.
Jerome B. Tenney.....	Pekin	T. A. Perkins, M.D.
Charles C. Terrell	Quincy	Prof. Stahl.
J. A. S. Townsend.....	Jacksonville	Prof. Prince.
Dr. R. B. Tripp.....	Binghamton, N. Y.
C. A. Wiggins	Quincy	Dr. E. Cary.
H. C. Wing	Troy, Mo.
J. B. Woodward	Jacksonville	Prof. Adams.

(8)

*Augustus F. Hand, M.D. (See Fig. 7).

*Daniel Pierson, M.D.

N. M. Hunt, M. D.

*G. Y. Shirley, M.D.

Charles Terrell, M.D.

state of society and public institutions, took the place of the present licensing board. Such boards had the great advantage of representing the profession which should properly control admission to the fraternity of practical medicine. The modern licensing board often has little consideration for the profession to which it belongs compared with the homage it pays to the politician. It would be a godsend if we could return to something of the spirit of the old days when it was supposed to be proper and just for the profession to have more voice in deciding who should join its sacred ranks.

The degree conferred on Horace A. Ackley speaks much for the state of medical education at that date. A professor of surgery in a Cleveland medical college has no degree and comes out to the wild country of "the Illinois" to be made a real doctor.

At the meeting of the trustees in June, 1845, the following action was taken:

The resignation of Doctor Todd as professor of in the medical department was communicated verbally through Prof. Adams, whereupon it was voted that the filling of that vacancy and making any further changes in that department, or provision for it as suggested by the medical faculty, be referred to the prudential committee.

We have often heard critical members of our profession complain of the laity for calling us "Doc," but they are certainly excusable in Illinois, at least, for all through these catalogues the professors and censors are called "Doc." With such high authority we should at least excuse our country friend, who calls out in the exuberance of his friendship "Hi, Doc!"

We fail to find a copy of an announcement for 1846 as promised in the catalogue of 1845. The only record is a list of the graduates who numbered thirteen.⁹

At the meeting of the Board of Trustees in June, 1846, the following action was taken: "On recommendation of the medical faculty and censors in that department, voted that the degree of M.D. be conferred on J. F. Rice and Henry Wing; also, voted that the same degree be conferred on M. H. L. Schooley of Virginia, Cass County. Voted that the following gentlemen, being all of them doctors of medicine, be appointed censors of the medical department for the coming year, viz.:

Haskell,	H. M. Stewart,	A. Reynolds,
Munroe,	M. M. L. Reed,	Adams Nichols,
E. Dunlap,	John Todd,	A. W. Pinkerton,
G. Y. Shirley,	S. S. Ransom,	James Bunce.

It must have been a proud day for this little pioneer medical school, so lately sprung up on the hunting grounds of the Iroquois, when they

(9)

MEDICAL GRADUATES

*Peter R. Boice, M.D.	Henry Owsley, M.D.
*James Budden, M.D.	J. F. Rice, M.D.
Warren H. Chapman, M.D.	Clark Roberts, M.D.
*C. C. Emerick, M.D.	Jerome B. Tenny, M.D.
N. B. Hooker, M.D.	Russell B. Tripp, M.D.
A. B. Ireland, M.D.	Henry Wing, M.D.
H. K. Jones, M.D.	

could point to the fact that their censors were all "Doctors of Medicine." That a few of them may have had only an honorary degree from this school does not alter the facts.

An entry on the records of the Board of Trustees at the same meeting shows that the medical department paid rent for the use of the "Medical Building." This is also the first mention on the records of a special building for the medics.

The catalogue of January, 1847, gives a list of twelve censors¹⁰ of the medical department. The faculty that year had been extended by the appointment of John James, M.D., Professor of the Principles and Practice of Medicine; Edward Mead, M.D., Professor of Materia Medica and Therapeutics, and J. Leland Miller, M.D., Professor of Anatomy and Physiology. Henry Jones, M.D., was returned to the Chair of Obstetrics and Diseases of Women and Children. The medical school that year had thirty-nine students,¹¹ which was one more than the total of the four classes in the college proper and was more than one-third of the total number of students in the institution including the preparatory department.

(10) CENSORS OF THE MEDICAL DEPARTMENT

John Todd, M.D.	S. S. Ransom, M.D.
A. Reynolds, M.D.	Adams Nichols, M.D.
A. W. Pinkerton, M.D.	James Bunce, M.D.
..... Haskel, M.D.	Thomas Munroe, M.D.
E. J. Dunlap, M.D.	G. Y. Shirley, M.D.
H. M. Stewart, M.D.	M. M. L. Reed, M.D.

(11) MEDICAL STUDENTS 1845-1846

Names	Residence	Instructor
*T. Aiton	Quincy	Medical Faculty.
F. L. Bostick	Fayette	Dr. J. R. Murphy.
J. M. Buck	Bunkerhill	E. Howell, M.D.
Austin E. Burns	Mackinaw	E. D. Burns, M.D.
J. Clark, Jr.	Maquoketa, Iowa	M. D. Clark, M.D.
M. B. Elder	Park Co., Iowa	W. J. Weaver, M.D., and J. M. Allen, M.D.
James B. Craven	Lewis Co., Mo.	P. Conditte, M.D.
L. S. Ferris	Fountain Green	Practitioner.
*F. R. Gallaher	West Ely, Mo.	D. W. Ferguson, M.D.
*Isaac V. Goltra	Green Co.	Henry Jones, M.D.
Richard Hains	Fayette, Mo.	W. R. & J. B. Snelson,
A. F. Hand, M.D.	Cass Co.	M.D.
Theodore Hay	Springfield	J. A. Hay, M.D.
E. P. January	Independence	Practitioner.
E. S. Jones	Jacksonville	Henry Jones, M.D.
*John S. King, Jr.	Fairfield	Edward Mead, M.D.
F. P. Lockett	Mechanicsburg	W. McNeill, M.D.
H. M. Lyons	Jerseyville	Medical Faculty.
Matthew Marvin	Mackinaw	Charles M. Ray, M.D.
D. H. McCord	Hazel Green, W. T.	E. C. Park, M.D.
J. H. McCord	Greenville	Medical Faculty.
J. N. McCord	Bond Co.	J. M. Barber, M.D.
J. S. McCord	Bethel	Practitioner.
A. Miller	Macoupin Co.	Practitioner.
*George S. Mosteller ..	Mason Co.	J. S. Allen, M.D.
J. C. Patterson	Middletown	Dr. H. P. Kelso.
P. L. Phillips	Metamora	David Prince, M.D.
A. Reynolds	Magnolia	A. Reynolds, M.D.
George W. Richards ..	Morgan City	A. Miltower, M.D.

The statement in the catalogue was considerably extended over that of 1845 and offered a number of improvements and new features.¹²

At the end of the catalogue is given a list of all the graduates¹³ of the medical department to date.

At the meeting of the Board of Trustees in June, 1847, we find the degree of Master of Arts was conferred on at least three men who had the year before received the degree of M.D.

At the same meeting the trustees took action regarding the appointment of professors in the medical department looking to improvement in the quality of the teaching by securing those of more experience.¹⁴

In January, 1848, a catalogue "pertaining to the medical school," was issued for the information of those desiring to enter on the study of medicine. Immediately following the list of names of the trustees¹⁵ is given the names of the "Censors of the Medical Department"¹⁶ for that year. This list is much more complete than that taken from the records of the trustees.

MEDICAL STUDENTS 1845-1846—(Continued)

Names	Residence	Instructor
George M. Scott	Richland	J. L. Miller, M.D.
Henry R. Smith	Jacksonville	Medical Faculty.
L. M. Todd	Springfield	John Todd, M.D.
J. M. Townsend	Chambersburg	David Prince, M.D.
M. P. Turner	Jacksonville	J. L. Miller, M.D.
L. W. Warren	Geneva	Edward Mead, M.D.
Francis N. Wells	Connecticut	J. H. Brown, M.D.
*H. Welch	Franklin	Practitioner.
*J. S. Whitmore	Matamora	J. B. Kyle, M.D., and M. H. Schooley, M.D.
John W. Young	Rural Valley, Pa.	Henry Jones, M.D.

(12) We take pleasure in announcing to the medical profession in our state, that since issuing our first annual circular, a set of commodious rooms have been fitted up for the Anatomical Department; and that during our last course of lectures, the most ample facilities for the prosecution of anatomical studies have been enjoyed. To this department also belongs an excellent cabinet of anatomical preparations together with the splendid colored plates of Bougery and Jacob, and Weber's full size copper-plate engravings.

The chemical department is amply supplied with apparatus for illustrating all the principles of chemical philosophy. Valuable additions to the apparatus are also expected before the next course of lectures begins. Cruveilhier's great work on Pathological Anatomy with colored engravings, has recently been imported from Europe, and as used in the lectures, is immensely useful in enabling the student to form a clear conception of all the most important changes produced by disease.

A superior set of apparatus and plates for illustrating practical obstetrics is provided for that department.

A select cabinet of materia medica will furnish all that can be desired in the way of illustration in that department.

The department of surgery is provided with the requisite instruments and apparatus. We are happy to state, also, that a considerable number of surgical operations have been performed before the class during the last course of lectures; and an increase may be expected from year to year, as advice is given and operations are performed before the class without charge.

There is a respectable medical library belonging to this institution, embracing the best modern works upon the various branches of medicine, to which students will have free access.

Arrangements are made for an ample supply of fresh subjects for dissection, from abroad; which will be furnished at cost to private classes. We are happy to assure medical students that they need apprehend no disappointment on the

It is interesting to notice in the list of the faculty of the college that half of them were for the medical school. And there were thirty students in the medical department ^{17, 18} and only twenty-seven in the college proper. There were twelve irregular students and twenty in the preparatory department, making a total of eighty-nine students in the institution.

It would be interesting to know the average age at which these young men entered on a study of medicine. The demand for doctors in this rapidly developing new west must have been great, for this infant medical school situated within a comparatively short distance of St. Louis, Louisville and Cincinnati to have had so many students. At this early date, the village of Jacksonville contained only about 2,500 souls, and settlements of consequence were few and far between. Much of the country was in its wild state, still given over to the hunter, unfenced and uninhabited excepting by a pioneer's cabin here and there. Under such

score of facilities for the prosecution of anatomical studies. It gives us pleasure to be able to accompany this assurance with the statement that no less than twenty-eight of the class of students in attendance this year, have taken the private dissecting ticket.

In addition to the regular course of lectures, a course of instruction will be continued through the year to those medical students who may find it for their advantage to remain on the ground. Medical students will have the opportunity of attending the lectures on natural philosophy and natural history. The philosophical apparatus is one of the best in the United States, having been obtained at Paris, at great expense. The lectures on natural history will be illustrated by Carpenter's Phantasmagoria Lantern, with a complete set of natural history slides, together with numerous plates, preparations and specimens. The price charged for admission to a course of lectures on each of the above subjects is only \$2.50.

BOARD, RENT, ETC.

Good board may be obtained in the vicinity of the college at \$1.00 to \$1.50 per week. More than half the expense of board may be saved by those who board themselves. Twenty or thirty students may be accommodated at a low rent with rooms, in the college building and in houses near the college premises.

REGULATIONS

Each student is required to call, early in the term, upon the Secretary of the Medical Faculty, to register his name, place of residence, and name of the practitioner with whom he had pursued his studies. The matriculation fee must always be paid in advance; and no student is entitled to the privileges of the institution till he has complied with this regulation. Advance payment is also required for the professors' tickets, unless otherwise arranged at the time. It is proper to state in this connection, that no respectable young man will be excluded from the privileges of this institution for want of the means to pay for his ticket in advance. But we trust that those who have friends or relatives, who are able to help them, will always esteem it more honorable to be in debt to those friends than to a public institution.

We would here urge the importance of every student being on the ground at the very opening of the course of lectures. The first lectures are preliminary, and are the most important part of the course.

It is recommended to each student to provide himself with a medical dictionary, and some good modern work on each of the branches which he wishes to pursue in connection with the lectures.

The following note, in pencil, is found at the close of the 1847 catalogue report.

"The following is a true copy of an abolition petition presented to the Senate and House of Representatives of Illinois.

"To the honorable, the Senate and House of Representatives of the state of Illinois. Your petitioners, inhabitants of Illinois, respectfully request and instruct your honorable body to repeal all laws now in force making a distinction among our people on account of color."

"Those persons whose names in the catalogue marked with a star were signers."

conditions it must have required great courage and confidence in the future to establish a college with a university basis, having departments of preparatory school, literary college, medicine, missionary preparation and theology. Such efforts certainly show a beautiful spirit in the little band of instructors which led this initial education movement in the pioneer days of the great state of Illinois. Such an educational effort appears very small to-day, surrounded as we are by rich and influential colleges and universities reared on a foundation of free public and preparatory schools, but it shows plainly what was in the hearts of the pioneer; what he hoped for his children in the state of his choice. This institution had no small part in paving the way for the future greatness of one of the greatest states of the Union. Many of the sons of this college have sat in the councils of the state and the nation. Much of the impetus of the anti-slavery cause was developed here where the training and the very atmosphere made slavery impossible. The war governor, Richard Yates, was its first literary graduate. Lincoln was touched by its

(13) 1845: Augustus F. Hand, M.D.; N. M. Hunt, M.D.; G. Y. Shirley, M.D.; Carolus C. Terrell, M.D.; J. B. Samuel, M.D.; Horatius Ackley, M.D. 1846: Petrus R. Boice, M.D.; Jacobus Budden, M.D.; Warren H. Chapman, M.D.; C. C. Emerick, M.D.; N. B. Hooker, M.D.; A. B. Ireland, M.D.; Henricus Ousley, M.D.; J. F. Riee, M.D.; Clark Roberts, M.D.; Jerome B. Tenney, M.D.; Russell B. Tripp, M.D.; M. H. L. Schooley, M.D.

Voted also on recommendation of the Faculty, that the Degree of Master of Arts be conferred on the following persons, Alumni of this College, of the Class of 1844 viz. Hiram K. Jones, M.D.; Henry Wing, M.D.; Parmenio L. Phillips, M.D., and Charles H. Tillson, also John Tillson Morton of the Class of 1843.

(14) A communication from the medical faculty was read and in accordance therewith resolved that candidates for professorships in the medical department of this institution be first appointed for one year only until they should be experienced Lecturers.

Resolved that Henry Wing, M.D., be appointed to the chair of *Materia Medica* and Therapeutics in this institution for one year.

Voted that the following gentlemen be appointed censors of the medical department for the ensuing year, viz.: Charles Chandler, M.D.; Charles Knight, M.D.; C. Roberts, M.D.; Merriman; Gibson; O. M. Long, M.D.; J. S. Rogers, M.D.; Russel, M.D.; J. B. Samuel, M.D.; Robert Toal; Nath'l English and Geo. T. Allen.

(15) Rev. Julian M. Sturtevant, President; Hon. Samuel D. Lockwood, William C. Posey, Rev. Theron Baldwin, Rev. John F. Brooks, Rev. Elisha Jenney, Rev. William Kirby, Rev. John G. Bergen, John Tillson, Thomas Mather, Frederic Collins, Rev. Thomas Lippincott, David Smith, David A. Ayres, William H. Brown, Rev. William Carter.

(16) Andrew Russel, M.D.; J. B. Samuel, M.D.; Robert Boal, M.D.; Charles Chandler, M.D.; C. H. Knight, M.D.; E. H. Merryman, M.D.; J. G. Rogers, M.D.; Nath'l English, M.D.; O. M. Long, M.D.; Clark Roberts, M.D.; Edward Moore, M.D.

(17) Julian M. Sturtevant, A.M., President.

Truman M. Post, A.M., Professor of History.

Samuel Adams, A.M., M.D., Professor of Chemistry, Natural History and Physical Etiology and Teacher of Modern Languages.

Henry Jones, M.D., Professor of Obstetrics and Diseases of Women and Children.

David Prince, M.D., Professor of Anatomy and Surgery.

John Jones, M.D., Professor of the Principles and Practice of Medicine.

Henry Wing, M.D., Professor of *Materia Medica* and Therapeutics.

William Coffin, A.M., Tutor in Mathematics.

Rensselaer Winchell, A.B., Tutor in Greek and Latin.

George W. Harlan, A.B., Instructor of the Preparatory Department.

influence as evidenced by his confidence in its long time president, Julian M. Sturtevant.

The statements of the catalogue of 1846, regarding lectures, degrees, advantages, etc., are practically the same as that of 1847. In the back of this catalogue is printed a complete list¹⁹ of the professors of the medical school from its beginning. This is in Latin and is reproduced.^{20, 21} (Cut of S. Willard, Fig. 8.)²²

At the meeting of the Board of Trustees in 1848, an arrangement was made with one Nat'l Coffin, Esq., that if he would pay the debts of the college certain properties would be transferred to him, "saving and excepting the thirty-three acres of land on which are situated the college buildings, appurtenances, library and apparatus—the medical hall and lot, etc." Not another word appears in the records of the trustees regarding the medical school until their meeting in January, 1853, the following resolution was adopted:

Resolved, That the Prudential Committee be instructed to repair the south wing of the late college building, as far as they think necessary for security and neatness.

That the medical hall be repaired under the direction of the Prudential Committee, provided they are convinced that the investment will be a good one and provided also that the cost be not reckoned as a part of the current expenses of the institution.

(18)	MEDICAL STUDENTS		
	Name	Residence	Teachers
	T. Aiton	Illinois	David Prince, M.D.
	J. Atkinson	Missouri	J. H. Kibbe, M.D.
	P. L. Bostick	Illinois	Dr. J. Murphy.
	T. Brockman	Illinois	N. English, M.D., and O. M. Long, M.D.
	W. T. Ewing	Illinois	Daniel Stahl, M.D.
	I. V. Goltra	Illinois	Henry Jones, M.D.
	E. Griswold	Illinois	H. P. Griswold, M.D.
	R. Hains	Missouri	W. O. & J. B. Snelson. M.D.
	J. N. Harnett	Illinois	Thomas Wilkins, M.D.
	D. P. Henderson	Illinois	David Prince, M.D.
	Nath'l Jayne, Jr.	Illinois	G. Jayne, M.D.
	W. S. D. Johnson	Missouri	P. Conduite, M.D.
	M. T. Klepper	Illinois	A. J. Mead, M.D.
	T. G. Klepper	Illinois	A. J. Mead, M.D.
	C. E. Lippincott	Illinois	G. T. Allen, M.D.
	D. M. Logan	Illinois	Sprague, M.D.
	H. C. Long	Kentucky	N. English, M.D., and O. M. Long, M.D.
	D. A. McCord	Illinois	Medical Faculty.
	F. S. McCord	Illinois	Samuel Adams, M.D.
	J. N. McCord	Illinois	Dr. J. M. Barber.
	J. S. McCord	Illinois	Practitioner.
	J. C. Patterson	Illinois	Medical Faculty.
	O. B. Payne	Illinois	J. Darrab, M.D.
	E. W. Roberts	Illinois	Practitioner.
	J. W. Thayer	Illinois	J. R. Lewis, M.D.
	John Walker	Illinois	Medical Faculty.
	S. G. Weagly	Illinois	J. T. Cassell, M.D.
	B. M. White	Illinois	E. C. Clark, M.D.
	David Wilkins	Illinois	Thos. Wilkins, M.D.
	Samuel Willard	Illinois	Drs. Nichols and Bird- sell.

At a meeting of the trustees on July 12, 1854, it was

Ordered that the Prudential Committee be authorized and instructed to sell at auction the medical hall and the lot of land upon which it is situated, being the eastern part of lot No. 64 on the plat of College Hill and bounded on the west by land sold to Mr. Crocker, provided they be offered for the same \$1,000 or more in cash or its equivalent on time well secured.

A catalogue of the medical school was issued in January, 1848, containing announcements of the faculty and courses of study for the ensuing year, but as far as we are able to learn from the records of the college, extant, or from other sources, no medical classes were held after the spring of 1848. Just why the project, which had apparently had so satisfactory a beginning, was so abruptly and unceremoniously discontinued does not appear. It does not seem to have been on account of debt, for there is nothing in the records of the Board of Trustees to indicate the existence of debt incurred by this department. Nor would it appear to have been

1846-1847		
(19)	PROFESSORS	
Accessus	Chemiae et Historiae Naturalis	Exitus
1838	Samuel Adams, M.D.	
	Medicinae, Theoriae et Praxeos	
1843	Daniel Stahl, M.D.	1844
1845	Johannes James, M.D.	1848
	Anatomices et Physiologiae	
1843	David Prince, M.D.	1845
1845	Johannes Leland Miller, M.D.	1847
	Obstetricii	
1843	Henricus Jones, M.D.	1848
	Materia Medicae et Therapeutics	
1843	Samuel Adams, M.D.	1845
1845	Edwardus Mead, M.D. (see Note 20)	1846
1847	Henricus Wing, M.D.	1848
	Chirurgicae et Chirurgicae Anatomices	
1844	Gulielmus B. Herrick, M.D.	1844
1845	David Prince, M.D.	1848
	Chemiae et Aetiologiae Physicae	
1845	Samuel Adams, M.D.	1848
	Sacre Theologiae	
1849	Julianus M. Sturtevant, S. T. D., Praes.	

GRADUATES

Peter L. Bostick, M.D.	*Henry C. Long, M.D.
Isaac V. Goltra, M.D.	James M'Cord, M.D.
Richard Hains, M.D.	John N. M'Cord, M.D.
Nathaniel Jayne, M.D.	Samuel Willard, M.D.

(20) Dr. Edward Mead represented the Medical Department of Illinois College at the National Medical Convention held in the city of New York, May 5, 1846. The *Illinois and Indiana Medical Journal* (1847) states that he resigned his place in Illinois College and removed to Chicago for the purpose of opening a private hospital for the insane. A year later he reported upon the "Chicago Retreat for the Insane" in the same journal. The Society of Medical History has a "Valedictory Address" to the graduates of the Cincinnati College of Medicine and Surgery. June 24, 1852, by Edward Mead, Professor of Obstetrics and Diseases of Women and Children.



This is the first Medical diploma ever
 given by the Medical school at Charleston.
 It was presented to President Cartwright, the President
 of the college on the 1st of November 1845, to the first medical graduate of that school.
 A. F. Hand

Senatus Academicus

COLLEGIUM ILLINOIENSIS.



Carthagenensis

OMNIBUS HAS LITERAS PERLECTORIS
 SALUTEM.

Scitis, quod Senatus Academicus Augustum Fredericum Hand Gradus Medici
 Candidatum, Praeses Consuetudinibus Sociis Honorandis ac Reverendis, Titulo Gradusque
 Doctoris in Medicina adornavit et condecoravit, et ei fruenda dedit omnia iura, Privilegia,
 Dignitates, Honores et Insignia quae huc, aut usque pertinent ad eundem Gradum erectis concedi solent.

In cuius rei Testimonium Literis haec publicum Collegii Sigillum et Praesidis Chirographum
 apponuntur.

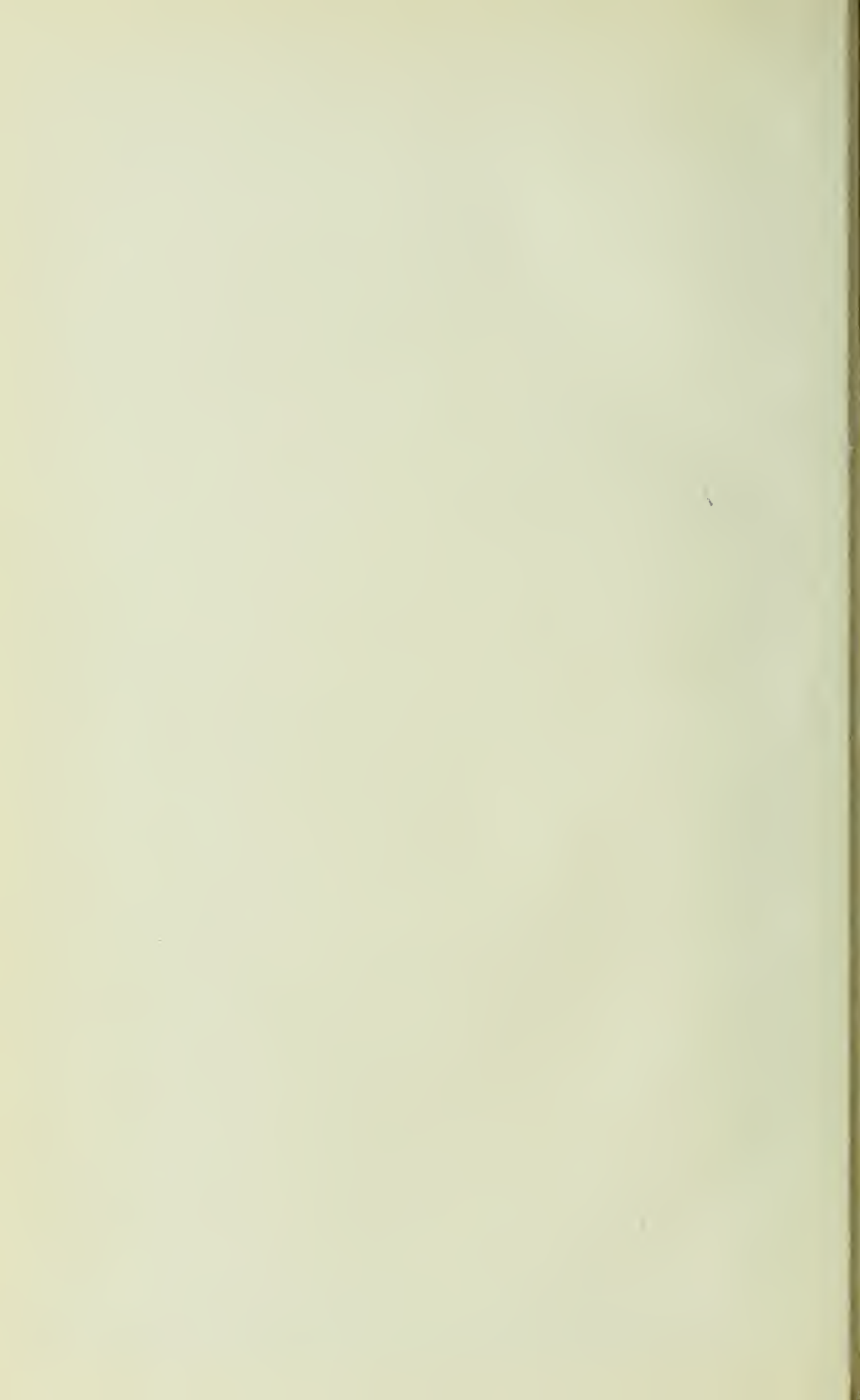
Datum ex aedibus academicis, die Vicesimo quinto Junii Anno Salutis Millesimo octingen-
 tesimo quadragesimo quinto, Annoque Reipublicae popularitatis Americanae Summae Reipublicae
 Sexagesimo nono.

Nathaniel Coffin

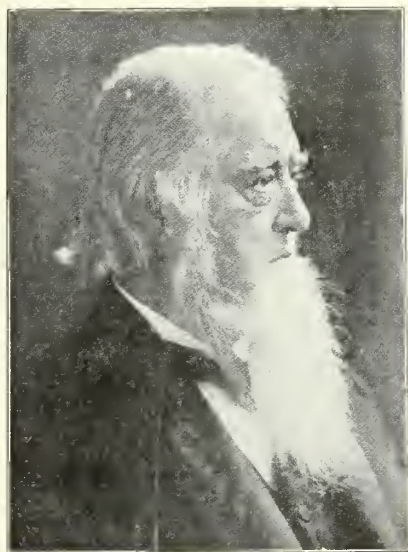
Pro Rectoribus

Julius von Hartmann

Fig. 7. Facsimile (reduced one-half) of the medical diploma issued to the first graduate of the first medical school in Illinois. Granted to Doctor Augustus Frederick Hand, by Illinois College, at the completion of his course in the Medical Department March 1, 1845. The diploma is the property of the Chicago Society of Medical History.



because of the pressure of competition, for at the date of the discontinuance of this school only one other, Rush Medical College in Chicago,²³ had been established in this state. The attendance seems to have been



CAT.
E.H.B.

Fig. 8. Dr. Samuel Willard of No. 1526 Fargo Avenue, Chicago, Ill., received his A.B. from Illinois College in 1843 and his M.D. from the same school in 1848. Although in his 91st year, he attended the meeting at the Auditorium when this paper was presented and made an interesting talk on this pioneer medical school and the physical and social conditions surrounding its existence.²²

(21) The following letter from Dr. Samuel Willard describes some of the early professors and students:

Dr. Carl E. Black, Jacksonville, Ill.

My dear Doctor: I return your History of the Medical College at Jacksonville, which has proved quite interesting, as it calls up names and faces long forgotten. Some things seem wrong to me; for instance, the name of Henry M. Lyons as a student (p. 13) before he graduated from college, but your document says so.

While the building depicted by Mr. Bowen was especially the Medical Building, most of the lectures were given in the College Chapel: in fact all except those on Anatomy and Surgery. The room that Dr. Adams had as Prof. of Chemistry in the regular college was used for the same purpose in the Medical; and Materia Medica and Therapeutics used that room; in that room I gave that lecture on Ether as an Anesthetic which you say was the first on that subject given in Illinois. Henry Jones used the Chapel for his lectures on Obstetrics; and there Dr. James lectured on Theory and Practice of Medicine; I do not recall the place of the lectures of Dr. Stahl, but presume that they too were in the chapel, hours for the medical lectures were easily arranged to be at hours that did not interfere with the regular college.

Dr. Stahl lived in Quincy, where he had considerable popularity and practice, not among Germans only. I had more acquaintance with him there than at college. Your brief description of him is correct. I do not remember that he adhered to the religion of his fathers; he told me that his father adopted the name Stahl when the Elector of Hesse ordered all his Jewish subjects to drop their Jewish names and to take those that were not distinctive.

fairly satisfactory and in the main was on the increase. Compared with the other departments this one had by far the largest attendance and its students paid the largest fees and were in attendance the shortest time. Considerable money and energy had been spent in accumulating apparatus, library, etc., which for years remained stored away in dusty uselessness in the old library in "Beecher Hall." About ten years ago, in order to make their old medical library available for physicians and students, it was turned over to the Morgan County Medical Society, where it now



Fig. 9. Sturtevant Hall (erected 1850), Illinois College, now used by the science departments.

Dr. Jones was an excellent lecturer, both as to matter and manner. He talked easily, and had many professional experiences and anecdotes. His notable self-esteem was not offensively prominent, it was so well balanced by his suavity. Dr. Prince was not a fluent lecturer; he seemed to struggle with the dialect of technical terms which he insisted upon using; perhaps if he had had the collegiate education in Greek and Latin he would have spoken more easily. He was not without his anecdotes and humor. In 1850, when I roomed with him in St. Louis, he received a medical journal which was English and mailed from England; he scanned its pages quickly to find something of interest; then tossed it to me saying, "I don't see why anybody sent me that." I found in it a short article which gave the names of the eight or ten persons who had up to that time successfully removed ovarian tumors; his name was there as of Payson, Illinois.

Dr. Mead was a pleasant lecturer; but he and Dr. Adams had the driest subjects, those least capable of any illumination or mirth.

I cannot speak of Dr. Adams apart from my acquaintance with him in my college course and afterwards. I should more than fill this sheet if I should try to tell what he was in mind and heart; he had studied European languages under Longfellow when the poet was professor in Bowdoin College; though under no

forms a part of the library of that society. Many of these books are very valuable historically and as book rarities, and a number of them are in Latin. In this school, like many others of its day, there was a mortal conflict between the faculty of the college proper and the sciences of which medicine even then formed a conspicuous part. The professors of Latin and Greek, and the honorable field of mathematics and the gentle and inanimate sciences of chemistry, botany and geology felt a repugnance for the men of the dissecting room. From all the writer has been able to learn the "Anatomy Question" was more important than any other single factor in discontinuing this pioneer medical school.²⁴

obligation to do so, he gathered classes in French and German, and gave me an introductory lesson in Spanish and Italian. In English he had studied not only its literature but its philology and phonology. No one of his associates had gone deeper into psychology and philosophy. He was an optimist in spirit. He said "when I see the people going wrong, I think they need another lesson of experience, and God is giving it to them." The more one saw of him, the more he came to know that Dr. Adams, modest and gentle, was great intellectually and spiritually, and rich in attainments.

Of the students whom I remember—and almost every name as I read it calls up a man,—I need not report individual impressions. Some were my friends in later years. Those of whom I heard most in later years were Henry Wing and H. K. Jones. Dr. Wing was one of the Board of Examiners of candidates for medical places in the army. When I was examined in February of 1862, the board had had before them 254 aspirants; the demands were greater afterwards. Dr. Wing was of too weak a fiber to undertake service in the field, whither his zeal would have carried him; his gentle, noble, useful life ended before he was fifty years old. Dr. Jones did not win his fame in his profession.

I think the picture of the Medical Building a good one. . . . I think of no more to say, and thanking you for the glimpses into the past, I am

Yours cordially,

SAMUEL WILLARD.

Harbor Springs, Mich., Sept. 10, 1906.

(22) Samuel Willard was born at Lunenburg, Vermont,* in 1821, and came to Carrollton, Illinois, with his father in 1831. His father was a druggist in Carrollton. He took the preparatory course at Shurtleff College in 1838 and graduated in 1843 from Illinois College in the class with Newton Bateman and Thos. K. Beecher. The next year he served as tutor in Illinois College and then began the study of medicine at Quincy, Illinois, graduating from the department of Medicine of Illinois College in 1848. While a student at Illinois College he was prominent in the activities of the underground railroad. He was at one time indicted by the grand jury on the charge of assisting run-away slaves but in the trial was not convicted. He practiced medicine in St. Louis, Mo., and in Collinsville, Ill. In 1857 he took charge of the department of languages in the Illinois State Normal University. He served in the Civil War as private and surgeon with the rank of major. After the war he was superintendent of the schools of Springfield, Ill., and in 1870 became teacher of history in the West Side High School of Chicago, where he taught for over twenty-five years.

(23) From "Early Medical Chicago," 1879, by Dr. James Nevins Hyde, we learn that Rush Medical College applied for a charter in 1837, which was signed by the Governor in 1837; in "the autumn" of 1843 Professors Brainard, Blainey, McLean and Knapp were appointed; First session began Dec. 4, 1843, and continued sixteen weeks; Dr. Wm. Butterfield was the first graduate about April 1, 1845.

(24) In a letter Dr. Samuel Willard says "The school was discontinued because it did not pay the professors who came from abroad to lose their practice at home for all they got by the professorship. For the most part they had promissory notes the payment of which was indefinite."

THE CLINICAL VALUE OF THE GONORRHEA COMPLEMENT FIXATION TEST *

(From the Genito-Urinary Clinic of Northwestern University Medical School.)

VICTOR D. LESPINASSE, M.D., AND MAURICE WOLFF, M.D.

CHICAGO

The gonorrhea complement fixation test is a true Bordet-Gongou phenomenon and is absolutely specific except for meningococcus infections. The history of this test for gonorrhea dates as far back as 1906, when some work was done by Miller and Oppenheimer and others. This work, however, was unsatisfactory, due to the antigens that were being used, and did not show uniform results. The first real work done with uniform results was published by Schwartz and McNeil in 1911. Schwartz's results have been confirmed by Schmidt, Keyes, Gardner, Clowes, Grahmohl, Swinburne and others.

It is not the purpose of this paper to discuss the principles or the technique of this reaction, so only a few words will be said on this subject.

The materials used for performing the gonorrhea complement fixation test are as follows:

First; a hemolytic system. In our work we have used an anti-sheep system, the amboceptor being rabbit serum which has been immunized against sheep's corpuscles, the complement being fresh guinea-pig serum and the receptor being a 5 per cent. solution of freshly washed sheep corpuscles.

Second; a gonococcal antigen: this is an extraction of the bodies of dead gonococci, dissolved in normal salt solution. The gonococcus is cultivated on appropriate media and after a forty-eight-hour growth, the extraction is made.* The extraction of cultures made from different individuals are mixed and used as a mixed antigen. Although in some cases, which will be mentioned, the test was made, using several single-strain antigens. The antigen must be carefully standardized to find its minimum complete binding dosage for positive serums, and its maximum dosage which shall not be anti-complementary by itself. We have made all our own antigens.

Third; the patient's blood-serum: the blood can be obtained from the ear or from a vein in the arm, in the same manner as blood is obtained for the Wassermann reaction. One c.c. or more of blood should be withdrawn. The blood is allowed to clot and the serum is withdrawn. This serum is used in the test. Before testing we inactivate the serum by heating at 56 c.c. for thirty minutes. The working basis of the test depends on the presence of gonococcal antibodies in the blood-serum, which will fix or destroy complement in the presence of the gonococcal antigen. A complete fixation is demonstrated by a complete inhibition or hemolysis and is designated as a positive reaction. When no antibodies are present, hemolysis occurs, and this constitutes a negative reaction.

* Read before the Englewood Branch of the Chicago Medical Society, Oct. 1, 1912.

Different grades of positives occur depending on whether the complement is completely fixed and these grades are designated as strong or complete, moderate and weak positive reaction.

The gonococcal antibodies, which will give a positive gonorrhea complement fixation test, appear in the blood about the end of the fourth week of the disease.

We have had thirteen primary acute cases that have had gonorrhea less than one month, with eleven negatives and two positives. Both of the cases showing positive reactions were in the fourth week of the disease.

These antibodies persist in the blood as long as there are any live gonococci present in the body; just how long they remain in the bloodstream after the death of the last gonococcus is not definitely known, but they probably do not persist very long. We have some work in progress at present to determine this point. In our series of cases of individuals with gonorrheal history, cited below, there is not a single positive reaction occurring after two years. This fact bears out Keyes' work in the persistency of the gonococcus in the urethra. According to the conclusion of Keyes, the gonococcus rarely if ever persists in the urethra longer than eighteen months. According to the gonorrhea complement fixation test, the antibodies can be present at least for two years.

The twenty-five cases headed "No gonorrheal history" are children and individuals who can be relied on to give honest statements.

Case	No. of Cases	Positives	Per cent.	Negatives	Per cent.
No gonorrheal history .	25	0	0	25	100
All the following cases were clinically well with the following gonorrheal history:					
1 year	12	3	25	9	75
2 years	9	1	11	8	89
3 years	8	0	0	8	100
4 years	2	0	0	2	100
5 years	10	0	0	10	100
6 years	2	0	0	2	100
7 years	3	0	0	3	100
8 years	6	0	0	6	100
9 years	4	0	0	4	100
10 years	12	0	0	12	100

In contra-distinction to the Wassermann test, which will become negative with mercurial or salvarsan treatment, there is no treatment that will render the gonorrhea complement fixation test negative. But there is a method of treatment that will render any one positive to the gonorrhea complement fixation test, whether he has a gonorrhea or not, namely: the injection of gonorrhea vaccines. Therefore, in cases recently treated with gonococcic vaccines, the gonorrhea complement fixation test is of little value.

Clinical Value.—The gonorrhea complement fixation test will detect the gonococcus anywhere in the body, in any variety of the disease, acute or chronic, during or after the fourth week of the disease.

Arthritis.—That it is of particular value in the differential diagnosis of arthritis, is shown by the following cases:

CASE 50.—An indeterminable knee-joint in which the diagnosis lay between a syphilitic and a gonorrheal joint. The Wassermann was positive and the gonorrhea complement fixation test was negative.

CASE 83.—An ankle joint infection in which all venereal diseases were denied. This case gave a negative Wassermann and a negative gonorrhea complement fixation test.

CASE 93.—Last gonorrhea four years ago; had it six or seven times previous. Pain in both feet and ankle joints; urethral findings negative. Gonorrhea complement fixation test positive.

CASE 164.—Gonorrhea eight years ago; now rheumatism in left knee with swelling of knee joint for past week; urethral findings those of acute gonorrhea. Gonorrhea complement fixation test positive. This case shows that the patient's present acute attack is an exacerbation of an old dormant disease, because he has not had his acute attack long enough to show a positive reaction.

CASE 187.—Woman with swollen, painful knee joint for past twelve years, coming after a child birth; has had some operation for the knee with no relief. Gonorrhea complement fixation test positive.

CASE 195.—Gonorrhea now six months, also several times previous; now has chronic case with morning drop; six months ago rheumatism in right ankle joint for two months; has same trouble for past two months. Gonorrhea complement fixation test positive.

CASE.—Woman (Dr. Osgood). Had a sore throat; the day following wrist and metacarpophalangeal joints swelled. Duration when first test was made, four weeks. Gonorrhea complement fixation test negative.

CASE 233.—Gonorrhea two years; has had a swollen ankle for a month; also complains of tenderness in heel and soreness of tendon Achillis. Gonorrhea complement fixation test positive.

Ophthalmological uses: In ophthalmological practice the gonorrhea complement fixation test is of value in the differential diagnosis of obscure cases of iritis.

Gynecologic uses: The gonorrhea complement fixation test is of importance to the gynecologist. First, to prove that a given leucorrhea is or is not gonorrhea. Second, to prove that a given pus tube is or is not gonorrhea. Third, to prove that a given pelvic cellulitis or peritonitis is or is not gonorrhea. Fourth, to prove that a given endometritis or cervicitis is or is not gonorrhea. Fifth, to aid in differentiating an acute appendix from an acute pyosalpinx. Sixth, to explain the occurrence of puerperal fever in cases that have been handled in an absolutely clean way, where the origin of the disease is in doubt. Seventh, before labor in a suspicious case so that extraordinary care can be taken as to gonorrheal infection of the baby's eyes.

CASE 152.—Woman with a leucorrhea for past three years; after an intra-uterine application she had severe pains, chills, and discharge; the opportunity for gonorrhea infection had been abundant, but no gonococci could be found in the very profuse discharge. The gonorrhea complement fixation test was negative.

CASE 153.—Woman with leucorrhea for past five years; married; temperature 99.5; pain in the pelvis; uterus tender and very slightly enlarged. Gonorrhea complement fixation test was positive.

CASE 170.—Had vaginal discharge for past six months; married woman with two children; smear of discharge showed no gonococci, and the gonorrhea complement fixation test was negative.

CASE 193.—Had vaginal discharge for seven years; never bothered her at all; came for treatment because of infection of medical student; examination showed gonococci in discharge, and the gonorrhea complement fixation test was positive.

Genito urinary uses: In genito urinary practice the gonorrhea complement fixation test is of value: First, to determine that a patient is absolutely cured of a gonorrhea; therefore, the gonorrhea complement fixation test should be very valuable to patients contemplating matrimony. Second, to determine for medico-legal or other reasons, whether a given acute attack has been recently acquired or whether the present acute attack is a recrudescence of an old latent infection.

This important phase is well seen in a case of Keefe's, reported by E. O. Smith: A young married man acquired gonorrhea and infected his wife. Both were subsequently pronounced cured clinically and microscopically. Six months later the husband returned with a new gonorrhea, two weeks old. He denied extramarital exposure. A gonorrhea complement fixation test done at this time was negative in both husband and wife. The wife had no clinical symptoms. Four weeks later he showed a positive and she still showed a negative, and was still clinically clean. This positive reaction occurring as it did demonstrated the infection to be a new one and the husband later confessed to the exposure.

Primary acute cases that have persisted less than one month give 15.4 per cent. positive, and 84.7 per cent. negative, while acute cases of the same duration, with a history of a previous gonorrhea give 69.3 per cent. positive, and 30.8 per cent. negative, showing that a considerable number are recrudescence and not new infections.

Epididymitis cases. We have had seven cases with two negatives and five positives. This may be explained by the well-known fact that some epididymi do not contain gonococci when they are opened up, and we know from prostate experience that pus organisms can and do cause epididymitis.

Strictures. We have had six cases showing two positives and four negatives showing that the gonococci had done their work and departed.

Chronic gonorrhea. Of these we have had fifty-seven cases; twenty-nine cases of primary and twenty-eight with a history of previous attacks.

The primary chronics show twenty-three positives, or 80 per cent., and six negatives, or 20 per cent. The multiple chronics show twenty-four positives, or 85 per cent., and four negatives, or 15 per cent. This would seem to show that a goodly number of the so-called chronic gonorrheas are not gonorrheas at all any more, but are some other infections; micrococcus catarrhalis, staphylococcus, or what not?

Therapeutic Value.—First the gonorrhea complement fixation test determines absolutely if the disease is gonorrhea, thus giving us a firm basis for giving gonococcus vaccines. It is of value also if one desires to administer gonococcic serum or phylacogen.

Second, since the gonococcus is a polyvalent organism, if the gonorrhea complement fixation test is made in an appropriate manner, it will determine the exact strain of gonococcus that is causing the disease, and a vaccine from that particular strain can be made, and used in that case, it being equivalent to an autogenous vaccine.

Case 98 demonstrates this point: Patient had gonorrhea several times; last attack occurring one and one-half years ago; it was acute for two

months and ever since then up to present time he has had occasional morning drop with meatus always stuck together; prostate nodular urine clear; few shreds: no gonococci demonstrable. The test was done with three different single strain antigens and the reaction was positive with one and negative with two.

The following table shows the result of the test in our first 200 cases. Many of these came in principally for Wassermann reactions—and the gonorrhea complement fixation test was done in conjunction—there is absolutely no relation of the antibodies.

Case	No.	Positives	Per cent.	Negatives	Per cent.
Acute	13	2	15.4	11	84.7
FIRST ATTACK—					
Previous attacks	13	9	69.3	4	30.8
Chronics	29	23	79	6	21
FIRST ATTACK—					
Previous attacks	28	24	86	4	14
Epididymitis	9	6	67	3	33
Joints	7	4	57	3	43
Stricture	5	2	40	3	60
Enlarged prostate and cystitis	3	1	3	2	67

We are under obligation for assistance to Professors Zeit and Kendall, also to Drs. S. Eisenstaedt, Fisher and Schlucter.

PRINCIPLES AND ADVANCED METHODS IN VACCINE THERAPY *

F. M. Wood, M.D.

CHICAGO

Empirical therapy is being more and more displaced by scientific therapy. The people demand it of the profession and the profession demands it of itself. Dissatisfaction with our ancient methods in therapy has led the public to seek relief in Christian science and mental therapy. We can no longer cling to a therapy that does not satisfy ourselves and the people. For ten years specific therapy has been struggling along until it commands the attention and interest and study of the entire profession. When Wright gave us a practical microscopic demonstration of the principle of phagocytosis and control of vaccine injections in the opsonic index, specific therapy took a long step in advance. This was proof positive that we were able to accomplish something with bacterial vaccines. Experimental testing of this therapy has been persistent for ten years. Hospitals and sanitariums are sending in continual favorable reports. Progress and advancement have been continuous in the knowledge of treatment with bacterins. The experience gained by clinical experiment has evolved some principles on this therapy which may be stated as follows:

* Read before the Kankakee County Medical Society, Oct. 10, 1912.

1. The human system recovers from an infection by auto-inoculation. The anatomy of the mouth, nose and throat is such that a vast area of mucous membrane is there exposed to infection. The lymphoid ring, composed of the tonsils and nasopharyngeal adenoid tissue, is peculiar in this respect. Numerous crypts and sulci pierce the depths of the tonsils and adenoids. These crypts continually pour forth numerous leukocytes of all kinds into the oral and nasal cavities. The nose with its many accessory sinuses, the frontal sinus, the maxillary antra, the ethmoid cells and the sphenoid sinuses, are all lined with mucous membrane, and subject to infection. The white cells of the blood are the scavengers of these areas, they combat every foreign substance attacking the mucous membrane lining these areas. When a patient is attacked by virulent bacteria in any of these cavities, we call it a rhinitis or tonsillitis, according to the area attacked. The bacteria have penetrated the membrane; the sub-mucosa as well as the mucosa is swarming with leukocytes. These attack the bacteria and destroy them, then pus appears, the patient swallows it, thus vaccinates himself, reaction takes place, with fever and further death of bacteria, and with a favorable reaction and the formation of sufficient opsonin to destroy the bacteria, the patient recovers. The favorable reaction is hastened by a dose of bacterin.

2. Small doses of bacterin are indicated in acute infections, large doses in chronic. The main reason for this is that the wall of fixed tissue cells surrounding the infection is practically *nil*, and the absorption of bacterial toxins is relatively large; the only obstacles in the way of bacterial invasion are a wall of fibrin and leukocytes. While in chronic affections there is a thick wall of fixed tissue cells and epithelioid cells surrounding the focus and the absorption of bacterial toxins is relatively small. It, therefore, requires a greater number of bacteria to produce a leukocytosis and the favorable issue.

3. The clinical symptoms are a valuable guide as to the dose and time to administer the vaccine, while agglutination serum tests and the opsonic index are checks which may be employed with great advantage. Each return of unfavorable symptoms indicates a new brood of the invading bacteria, which is well indicated also by leukocytosis. A leukocytic count will often aid as much in indicating the spacing of the doses as any other measure.

4. Correct bacteriologic diagnosis is essential to success in this therapy. Every clinician will find it to be of distinct advantage that he become an expert in bacteriologic diagnosis. The clinic and the laboratory are inseparable when good work is to be done in this therapy; and advanced methods require careful work in bacteriologic as well as in symptomatic diagnosis.

5. Mixed vaccines are best in mixed infections. The long process of estimating the opsonic index of the various germs in a mixed infection with their careful isolation in a series of cultures has proven over and over again to be a waste of valuable time, which might result in the loss of life to the patient. While the use of a mixed bacterin prepared from

the infecting focus will often abort the entire process and save him untold suffering.

6. Autogenous vaccines are valuable in most cases. There is a place also for stock bacterins in prophylaxis, and in chronic infections. The use of typhoid bacterin to prevent typhoid is sufficient proof of this. The infecting strain of the staphylococcus or streptococcus involved is often missing in a stock bacterin. The strains of the streptococcus are numerous; the stock vaccine may contain the one in the infection being treated, or it may not. Failure often comes where stock vaccine is used, especially where the bacteriologic diagnosis is uncertain, when the use of an autogenous bacterin solves the problem. Stock bacterins prepared by the various commercial houses in acne, tuberculosis and for the prevention of typhoid fever, have been used successfully. They are of great value as a prophylactic in initial doses in acute infections, while the autogenous bacterin is being prepared. They can be used often with advantage where the preparation of a bacterin from the patient is a slow process, as in acne and tuberculosis.

7. The time to administer the vaccine is when the second positive phase is rising, or is at its height. After a dose of vaccine the index rises for a certain short initial period, then falls. The vaccine is given when the index rises again on its longest rise prior to the subsequent long negative phase. The vaccine should not be given during this negative phase, unless one wishes to have a prolonged continuance of unfavorable symptoms, and if the dose is large, even lose his patient in grave cases. The time to administer the vaccine in febrile cases is at the beginning of the second rise of temperature.

8. The reaction period should not be entirely complete before the next injection, to avoid severe anaphylaxis in virulent infections involving large areas. Rosenow says that the pneumococcus, strepto muc. capsulatus, *B. typhosis*, *B. coli* and the spirillum of Metchnikoff, at certain periods of their autolysis, either in salt solution (or human serum *in vivo*) become very toxic, and the liberation of these toxins produces all the symptoms of anaphylaxis.¹ This is just what takes place in the human system following the infection of a new area or the administration of a bacterin at the improper interval, the liberation of large doses of these toxins, and produces only harm; administered at the proper interval they heighten all the protective processes and only do good.

9. The vaccines should be sterile and their administration be done in an aseptic manner. The vaccines are made sterile by the use of certain antiseptics in 1 per cent. solutions; iodine, trikresol or phenol may be used. The injections are made deep into the submucosa, where the blood supply is sufficient for their rapid absorption. The skin is cleansed with alcohol.

10. The blood-supply to the part infected is made certain by the use of Bier's hyperemia, if necessary, and the fluidity of the blood is secured by the use of sodium citrate or lemonade; this later is to cut down any

1. Rosenow, E. C., Chicago: Production of Anaphylactic Substances by Autolysis of Bacteria and Their Relations to Endotoxins, Jour. Infect. Dis., Chicago, January, x, No. 1, pp. 1-28; abstr., Jour. Am. Med. Assn., Feb. 3, 1912, lviii, 369.

excess of fibrinization. Elimination following the use of the vaccine to rid the system of destroyed bacteria and their toxins, by the use of calomel and the enema is essential to success in carrying out this therapy.

SOME ADVANCED METHODS IN CERTAIN DISEASES

1. *Abscesses, acute gonorrhea, fistulae, ulcers, acne and eczema* may be best treated by the alternate local application of vaccine. The vaccine for local application may be applied in concentrated form, in half dram doses to abscesses, by injecting it into the abscess. Reaction is often marked, chill may occur, but rapid cessation of the discharge results. In ulcers the vaccine is rubbed in thoroughly over the floor of the ulcer with cotton swabs. In acute otitis, the vaccine is pumped into the middle ear with Siegel's otoscope. In acne, the vaccine is applied to the pustules after they are opened and emptied of their purulent contents. The reaction is often marked and no injection of the vaccine should be given at the time of the local application, as the autoinoculation from the manipulation of the pustules is sufficient. Chronic gonorrhea requires large doses of mixed bacterin, for the infection is usually a mixed one. Acute gonorrhea is benefited by drop doses of the bacterin applied locally as far back as the infecting focus. The principle involved here is, that no living thing can live in its own excreta.

2. *Pneumonia, bronchitis and tuberculosis.* Mixed bacterins are especially valuable in all lung infections, as the flora of the mouth get into the lung. The failure to cure pneumonia with pure pneumo-bacterin is often due to the fact that the infection is a mixed pneumo-strepto, *M. catarrhalis*, influenza, *B. coli* infection.

3. *Tonsillitis, neuralgia and rheumatism.* (Kindly note the grouping here.) These affections are more often associated than not. In a recent case under my care, the father had acute inflammatory rheumatism, with joint involvement. The younger son came down with acute tonsillitis, with a subsequent slight involvement of the joints; an older brother came down with a tonsillitis; all three had the same streptobacillus malae in the cultures made from their throats, and all three recovered from injections of the vaccine made from these cultures. Neuralgia is amenable to bacterins prepared from cultures taken from the margins of the gums. Acute tonsillitis is aborted by one or two doses of bacterin in from twelve to twenty-four hours, administered orally in children. Scarlet fever epidemics will soon become impossible. Bacterins from the throats of infected cases protect those who have been exposed and cause rapid convalescence, with no complications, in those who have been infected. Oral administration of bacterins is a valuable procedure. The reaction is less marked, but the therapeutic result is good, especially in nasopharyngeal infections. It is of especial value in treating children where the use of the needle is inadvisable.

The Relation of Vaccine Therapy to Our Therapeutics.—The advance in the treatment of infection by the use of biological products has been steady and certain. The bacterins are not cure-alls, nor must we regard

them as the universal panacea for all diseases. I have only to call your attention to the former means of treating infected foci to bring out the relative value of the use of the bacterins.

The methods of treating infection may be enumerated as follows:

1. By the use of chemical antiseptics.
2. Extirpation of the foci.
3. Determination of a fresh supply of lymph to the part infected.
4. Serum therapy.
5. Expectant treatment.
6. The bacterins.

This is the classification of Sir Almroth Wright, and cannot be improved on. It will serve to aid us in the consideration of the relative value of our methods of treatment.

1. The use of chemical antiseptics has been, and is still used, by a very large body of the profession. Its limitations are worthy our consideration. The problem of finding an antiseptic for application to infected foci, which would at the same time destroy the invading microorganisms and leave the tissue cells unharmed, has as yet not been solved; for this reason their use has very largely been abandoned by the men who are foremost in the treatment of infections.

2. The extirpation of the infected foci. This procedure is most often attended with danger to life and disfigurement. It is often essential to carry it out in order to prevent extension of foci, but if it may be avoided, such a decision is of value to the patient. The extirpation of foci often fails by opening a wider field to the invasion of the virulent microorganisms. It may succeed, if the infection is non-virulent, and the patient's resistance is good, but failing these, the patient often succumbs in spite of eradication. The opening of a focus often succeeds of itself in flooding the focus with lymph rich in antibacterial substances and thus healing and cure results.

3. Lymph determination. Bier's hyperemia and hot applications may succeed when we have a blood rich in anti-bacterial substances, but if these are lacking, what then? We may also have a lymph so rich in certain fibrin-forming salts that it coagulates in a wide area surrounding the focus, thus effectually shutting off the supply of fresh lymph. Here then we must have recourse to the use of defibrinating agents such as citric acid or lemonade. Again we may have a condition in which there is little fibrin formation, and the coagulating index is very low. Here, then, obviously, the barriers to the spread of infection are removed and hyperemia of foci is contra-indicated. We must attempt to supply those salts which will restore the coagulating power of the blood. This may be done, as already pointed out by Wright, by the use of calcium lactate or chlorid, or better, the use of lime water and buttermilk.

4. Serum therapy. The value of antitoxin in tetanus and diphtheria is unquestioned, but the various serums prepared from germs that do not produce soluble toxins are not of great value, and are perhaps only bacterins diluted with the serum of the animals inoculated. These later are the various antistreptococcic serums, which are of undetermined strength and doubtful value.

5. Expectant treatment. Undoubtedly natural resistance is capable of throwing off 90 per cent. of all the infections which attack us, but it is the

other 10 per cent. that we must attempt to save. Then again, the body may be able to survive infection, but not without mutilation and functional impairment. We must make the attempt to assist Nature and prevent this.

6. This brings us to the consideration of the use of bacterins in this work. The skin is the natural protector of the body. Biologically the ectoderm, and all the tissues which spring from this germ layer, are for protection. The inoculation of a bacterin into the submucosa brings into activity all the protective forces. The opsonins are the result of the reaction of these protective forces. They are perhaps chemical substances produced in the bodies of the phagocytes, and possibly some other of the protecting cells. The use of the bacterin floods the patient's serum with bacterial toxins, every protecting cell reacts to this substance producing antibacterial substance; this again floods the serum with opsonins, bacteriolysins, or agglutinins, according to the bacterium used in making the vaccine. The formation of opsonin at once stimulates the leukocytes to increased activity, and they attack the original focus, break down the wall of surrounding fixed tissue cells, fibrin, lymph and coagulated blood; carry that away, gain access to the focus, ingest the bacteria, digest them, or carry them away for excretion through the kidneys. Now, an excess of this process is a danger. It may flood the serum with the endotoxins of the dead bacteria and set up a dangerous condition of toxemia; the unfavorable negative phase may follow both the use of large doses and the administration of doses given during the negative phases, when the patient's resistance is low.

The bacterins then reach the microorganisms, which the surface application of chemical antiseptics cannot reach. They may be used to forestall the use of the knife in the acute infections, where little destruction of tissue has taken place, and will often abort these foci. They may also be used to aid in the softening of old foci, such as tubercular cervical lymph glands. Then, by the use of the knife and the consequent flooding of the foci with lymph rich in antibacterial substances, these foci will heal, and thus avoid the necessity of disfiguring operations.

The use of the bacterins may also come to the aid of serum therapy in eradicating the bacilli that may persist after the antitoxin has done its work of neutralizing toxin. The waiting method has no place, where we have a method as accurate as this, for aiding the body in producing the antibacterial substances, which it is already trying to produce. This is especially true where we have an advancing focus or an infecting process in which the blood is deficient in protective substances, as is readily shown by agglutinating reactions and opsonic indices. It is also true in infections where foci are surrounded by coagulated lymph or much fibrous tissue; and it may be said also to be true, even in those grave septic processes, where the protective substances in the blood-stream are all but exhausted; if we come to the rescue in time, we may produce enough of the antibacterial opsonins, agglutinins and bacteriolysins locally, to once more flood the blood-stream, and save the life that is ebbing away.

The Immunizator.—The physician of the future has already become an immunizator, as Wright predicted. We can even expect perfection of these methods in the future. The examination of bacterial toxins is still little understood, and the true mechanism of the formation of the various protective substances is still unknown. Biologic chemistry is still a matter of theory. We have yet seen only the glimmerings of the dawn of the day of the immunizator.

Research Work.—The clinic and the laboratory should work hand in hand; there is a great field open to the investigator, who will use his microscope and his brains in his every-day practice. It is with urgent interest that we call your attention to this open door to distinction and great public service. Many problems are still unsolved. Cancer, nephritis, diabetes still await a solution.

New Discoveries.—It may not lack interest that a bacterin has been prepared for psoriasis. Dermatologists have searched long and in vain for a bacterium causing this disease. In August, 1911, it was my good fortune, while taking cultures from various ulcers and eczemas, to take one from a case of psoriasis, when to my surprise, I succeeded in growing a fungus on blood-serum, the exact miniature of the large patch on the skin. I hastened at once to make transplants of this culture and to make a bacterin. From the use of this bacterin, both locally and hypodermically, this case of psoriasis has so much improved that it appears that we have succeeded at last in isolating the cause of psoriasis. I have isolated the same fungus from another case of psoriasis. To date the original case is still under treatment with lesions not advancing. Both local application and inoculation has been practiced in this case.

Luetin.—It may interest you also, to know that in January, 1911, the writer conceived the idea of a skin test for syphilis, and prepared an emulsion of *Spirochata pallida* for use, in a similar manner to that of Von Pirquet in tuberculosis, and that a reaction was obtained, also, in syphilis. This work was begun in January, 1911, and mentioned to Dr. S. S. Graves, Dr. Frederick Test and to Dr. Fred Harris, of Chicago. Since that time Dr. Noguchi has announced a similar work confirming this reaction in over 500 cases of secondary and tertiary syphilis. Dr. Noguchi has shown that this reaction does not occur in the primary stage of syphilis.

New Investigations.—The use of diphtheria bacterin in true diphtheria is a worthy field of investigation, and has been carried out by Hewlett and Naukwell, of London and Petruschky, of Berlin, for the purpose of eradicating the bacilli in the throats of convalescents and bacillus carriers, and that the dangers of horse-serum anaphylaxis may be avoided. Favorable results in twelve cases have been thus far reported. Tetanus bacterin is worthy of a trial in tetanus. Emulsion of leukocytes and fixed tissue cells when sterilized and injected, produce lysis of the corresponding cells. Emulsions of cancer cells are now being used by French physicians to produce lysis of cancer tissue, and in hopeless cases of cancer many favorable results have been obtained. This method of treating cancer

deserves careful investigation, and points toward a favorable result in combating this, perhaps the most deadly scourge of the race.

Specific therapy demands the most painstaking efforts and the most careful research work, but the rewards are great, for it is in the highest sense a life-saving work, the honors are sufficient to satisfy the highest cravings of the soul.

15 East Washington Street.

BRILL'S DISEASE, MILD TYPHUS FEVER, IN THE MICHAEL REESE HOSPITAL *

[From the Department of Clinical Research, the Michael Reese Hospital, Chicago.]

SOLOMON STROUSE, M.D.

CHICAGO

In 1910, N. E. Brill¹ described "an acute infectious disease of unknown origin," based on a clinical study of 221 cases at the Mount Sinai Hospital, New York City. This disease, according to Brill, "can have no relation to typhoid fever *per se*, but . . . it has a distinct clinical entity entirely separate from typhoid, from typhus, or from any other disease known to me." This disease became known in the literature as Brill's disease, and a small but most interesting series of studies has appeared. In this communication it is my purpose to review the subject critically, and to add some new cases from Chicago.

The definition of the disease can be given in no better form than by quoting verbatim from Brill's report: "An acute infectious disease of unknown origin and unknown pathology, characterized by a short incubation period (four to five days), a period of continuous fever, accompanied by intense headache, apathy and prostration, a profuse and extensive erythematous maculo-papular eruption, all of about two weeks' duration, whereupon the fever abruptly ceases either by crisis within a few hours, or by rapid lysis within three days, when all symptoms disappear." As contrasting with the symptoms of typhoid fever, emphasis is to be laid on the short incubation period and sudden onset, generally with a chill. Headache is intense, conjunctivae are congested. About the sixth day a characteristic rash appears. At first found over the abdomen and back, it quickly spreads to the thorax and to the arms and thighs, and occasionally to the neck, forearms, hands, legs and feet. The rash is dull red, very slightly raised, does not disappear on pressure, does not appear in crops, is profuse and is distinctly erythematous, differing in all these respects from the rose spots of typhoid fever. The pulse is not high—86 to 100 per minute, is soft, full, of low tension and often dicrotic. The temperature reaches its fastigium on the second or third day, remains constantly high till just before the crisis, when a precritical rise may occur. On the

* Read at the Sixty-Second Annual Meeting of the Illinois Medical Society, held at Springfield, May 21-23, 1912.

1. Brill: An Acute Infectious Disease of Unknown Origin: A Clinical Study Based on 221 Cases, *Am. Jour. Med. Sc.*, 1910, cxxxix, 484.

twelfth to the fourteenth day the symptoms disappear, the temperature drops, and the patient feels perfectly well. Constipation is a marked feature of the disease. The spleen is frequently, but not always, enlarged. Associated with intense headache are extreme apathy and a facial expression of great pain.

Bacteriologic and blood studies show some further differences from typhoid fever. The average blood count is from 9,000 to 11,000, and the leukopenia of typhoid is lacking. The average differential count showed 69.4 per cent. polymorphonuclears, and 30.6 lymphocytes. As for the Widal reaction, in not a single case was a positive reaction ever obtained, even though the test was done daily in most of the cases. Blood cultures were persistently negative, and attempts to isolate a specific microorganism from feces and urine were also unsuccessful. The negative blood cultures performed in an institution where positive cultures are obtained in nearly every case of typhoid fever, and the entire absence of the Widal reaction are in themselves sufficient evidence that the disease is not typhoid fever.

None of the cases in the first series had ended fatally, so that pathologic data are completely wanting. In a second report² one autopsy is recorded. This showed absolutely none of the characteristic lesions of typhoid fever, and gave no specific picture. The lesions found were the congestion and parenchymatous changes of a severe toxemia.

In this brief condensation we have attempted to describe Brill's disease, and to emphasize the points wherein it differs from typhoid. Anyone who has just read a description of typhus fever must have been struck by certain clinical similarities between the two diseases. In fact, Brill says: "In the case of an epidemic of typhus fever, in my opinion, it would be simply impossible to say that these cases were not mild typhus fever. From the clinical aspects no lines of demarcation can be fixed." However, this disease was not virulent, was constantly present in New York, was not communicable; and until typhus fever was shown to have been so changed by its environment as to have acquired these characteristics, Brill was decidedly of the opinion that his disease must be other than typhus.

About one year later, Louria³ reported eighteen cases of the disease from Brooklyn, and his conception of the disease is that it is merely attenuated typhus. Friedman,⁴ in the same year, in a critical clinical review of endemic and sporadic cases of typhus in Russia, concludes that these cases and Brill's are absolutely identical, and Cheinisse⁵ holds the same opinion regarding some cases he saw in France. Brill,⁶ however, in a subsequent note again states that he does not think his disease is typhus fever.

2. Brill: Pathological and Experimental Data Derived from a Further Study of an Acute Infectious Disease of Unknown Origin, *Am. Jour. Med. Sc.*, 1911, cxlii, 196.

3. Louria: Brill's Disease, *Med. Rec.*, 1911, lxxx, 424.

4. Friedman: Brill's Symptom-Complex; Typhus Fever; Manchurian Typhus, *Arch. Int. Med.*, 1911, viii, 427.

5. Cheinisse: La "Maladie de Brill," est elle une Entité Morbide Nouvelle? *Semaine méd.*, March 27, 1912, xxxii.

6. Brill: *Jour. Am. Med. Assn.*, 1911, lvii, 1854.

Thus the matter rested on purely clinical grounds until Anderson⁷ and Goldberger⁸ applied experimental methods to the study, and to our mind clearly demonstrated the identity of Brill's disease and typhus fever. Struck by the clinical similarities between Mexican typhus, which they were investigating, and the disease described by Brill, they attempted monkey inoculations with blood of patients suffering from Brill's disease. Brill had already made unsuccessful efforts to transfer the disease to monkeys, but Anderson and Goldberger succeeded in their attempts. In the monkeys successfully inoculated, after an incubation period of five to fourteen days, a rapid rise of temperature ensued, falling by rapid lysis or crisis after about nine days. An eruption was never seen. The disease thus produced in monkeys by inoculating the blood of a human could be transferred from monkey to monkey, and in one case it has been carried through fifteen generations. Having shown that the Rhesus monkey is susceptible to Brill's disease, Anderson and Goldberger next attempted to study the relationship between this disease and Mexican typhus. In a most striking series of perfectly controlled experiments they demonstrated that monkeys which had recovered from an inoculation with blood of Brill's disease were immune to subsequent infection with Mexican typhus, and, vice versa, monkeys which had recovered from Mexican typhus were immune to Brill's disease. We agree thoroughly with their conclusion that "the disease described by Brill is identical with the typhus fever of Mexico, and inasmuch as the New York strain is undoubtedly of European origin, we may also conclude that the typhus of Europe and the tabardillo of Mexico are identical."

Thus, by an ideal combination of most accurate clinical observation and of scientific laboratory investigation a new chapter is introduced into the story of typhus fever. This disease can no longer be considered only as a highly virulent contagious epidemic, but the non-virulent endemic or sporadic type of the disease must be recognized. The disease is still a malady of bad sanitation and filth, and its mode of propagation is understood. Anderson and Goldberger⁹ review all previous work and add original experiments of their own to show that body lice and head lice may convey the disease. The importance of these observations will be discussed later.

If typhus fever is endemic in New York, especially amongst the immigrant classes, it is only logical to assume that the disease will be found in other localities, like Chicago, where both immigrants and lice may be said to abound. Before the nature of Brill's disease was settled, I was interested in finding cases of it in the wards of the Michael Reese Hospital, and I am indebted to members of the staff for the privilege of reporting some cases which I believe must be classed under the disease we are studying.

7. Anderson and Goldberger: The Relation of So-Called Brill's Disease to Typhus Fever, Pub. Health. Rep., Feb. 2, 1912, xxvii.

8. Anderson and Goldberger: The Experimental Proof of the Identity of Brill's Disease and Typhus Fever, New York Med. Jour., 1912, xcv, 976.

9. Goldberger and Anderson: The Transmission of Typhus Fever, with Especial Reference to Transmission by the Head Louse (*Pediculus Capitis*), Pub. Health Rep., 1912, xxvii, 297.

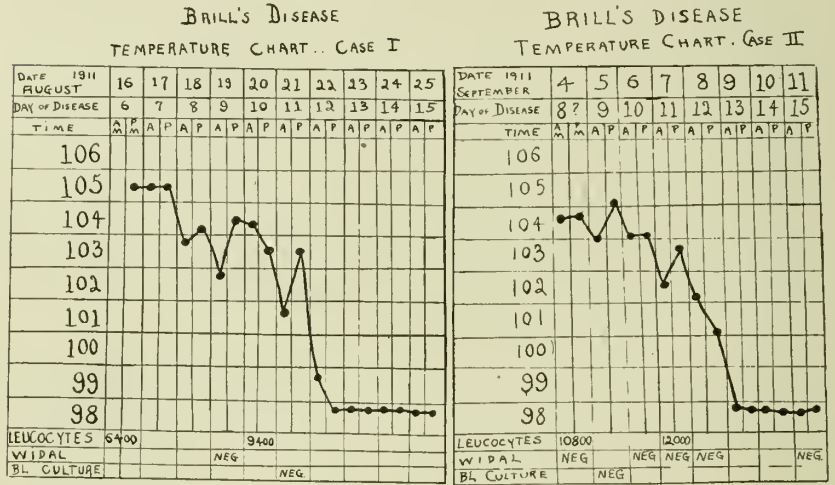
CASE I.—I. M., Russian Jew; male, aged thirty-five years; entered the hospital August 7, 1911, complaining of general malaise. Five days before admission he had general weakness and pains throughout his body. That afternoon he had a chill, followed by perspiration and a feeling as of fever. Chills were repeated, and an agonizing, persistent headache was complained of. Appetite poor; bowels regular. Vomiting once, on the second day of the illness. History otherwise is negative.

Past History: Entirely negative. Patient came to this country from Russia five years ago, and has lived in Chicago constantly since then.

Family History: Negative.

Physical Examination (abstracted): The temperature was 105°, pulse 144, respirations 40. A few crepitant râles were present in the lower border of the right lung. Spleen was not palpable. "No Rose Spots," but a "few macular spots are present on abdomen, lower chest and back." Otherwise the examination was completely negative.

On the day of admission the blood showed 79 per cent. hemoglobin, 4,600 leucocytes, and no malaria parasites.



The next day marked apathy of the patient is noted, and the rash is described as follows: "No rose spots are seen. A maculo-papular rash, quite diffuse, over chest, back and abdomen, less marked on extremities. Face is exempt. The color is dull red or reddish-brown. No pruritus." On the twenty-first, five days after admission and the eleventh day of the disease, the rash had almost disappeared, leaving a few areas of pigmentation. The headache has almost completely disappeared.

The course of the temperature is given in Chart 1.

Two Widal's and one blood-culture were negative; the urine showed nothing remarkable. On the tenth day of the disease the white count was 9,400.

Summary of Important Points: 1. Short incubation period. 2. Sudden onset. 3. Chills, headache and apathy. 4. A fairly constant temperature, falling by crisis over night, on the eleventh day. 5. A maculo-papular rash. 6. Negative blood culture and Widal reaction, with leukocyte count of 9,400.

A case with these characteristics formerly would have been entered under the diagnosis of "ephemeral fever," "febricula," or some other waste-basket into which are dumped all the unknown febrile diseases.

With our present knowledge, however, it seems to me that the disease must be called typhus fever. At the time the patient was in the hospital he was shown as a case of Brill's disease.

CASE 2.—Mrs. Y. B., Jewess; aged 38 years; entered the hospital Sept. 4, 1911, complaining of general malaise. About seven days ago illness commenced with headache, dizziness, anorexia. Four days ago (September 1) headache was more severe, and she felt hot and feverish. Bowels regular.

Past History: Negative. (No mention made of residence.)

Family History: Negative.

Physical Examination: Is completely negative except for the presence of a maculo-papular rash on chest, abdomen and extremities. Temperature 104° , pulse 96. Spleen is not palpable. Blood-examination showed a leukocyte count of 10,800. The temperature course is seen in Chart 2.

Five Widal tests and one blood-culture were negative. The urine showed nothing of note. The leukocyte count varied from 10,000 to 12,000. Differential count: Polymorphonuclear leukocytes, 68 per cent.; small mononuclears, 28 per cent.; large mononuclears, 2 per cent.; eosinophils, 2 per cent. Red blood-corpuscles, 4,280,000. Hemoglobin, 82 per cent.

On September 7 the temperature was 103.8° ; the next day it was 101° , and on September 9 it reached normal, remaining normal until the patient left the hospital. When the temperature dropped, the headache ceased, the rash disappeared, and the patient felt well.

Although the course of this case is not as sharply defined as Case 1, still it seems to me to be definite enough to warrant its inclusion in this group. Two other cases are recorded as Brill's disease on the records of the hospital, but as in each case one or two points are not discussed, it seems best not to report them. The records here given, however, show clearly that typhus fever has occurred in Chicago, and probably will be found to occur much more frequently as clinical interest becomes more centered on the affection.

The importance of finding the disease in Chicago is by no means limited to a mere diagnostic interest. The chances of typhus fever being sporadic or even endemic in the large cities of the United States must be considered. Although the researches showing the transmission of typhus by lice rob the disease of its historical awe-inspiring danger, it must, nevertheless, be remembered that the mild type described by Brill is the same disease as the severe type seen in Mexico. It is highly probable that the disease seen in the United States will remain the mild type, and it is just as probable that it will be found in most large cities. Nevertheless, it must always be borne in mind that the transition of the disease from Brill's type to the Mexican type is not impossible. For these reasons clinicians and Boards of Health should be on the constant lookout for the malady.

If I have succeeded in stimulating your interest in this new type of an old disease, the purpose of this paper will have been fulfilled.

Since this paper was read several new cases have been seen in the hospital.

104 S. Michigan Avenue.

MILK *

J. W. VAN DERSLICE, M.D.

Assistant Professor of Pediatrics, Rush Medical College

OAK PARK, ILL.

Milk is the one article which is used universally by man as food. That it is so largely used in the dietaries of infants and invalids makes it of extreme importance to the physician.

Milk was not intended to be exposed to air, but was intended to pass directly from the teat to the mouth of the consumer. This fact in itself probably explains why cows' milk normally contains bacteria. The bacterial content of milk has during the past few years attracted the attention of the medical mind and, by an immense amount of work by our medical laboratory men, there is beginning a new dawn in the understanding of this most important food product. The rôle of the various bacteria, however, are but little understood. The large percentage of bacteria found in milk are the so-called lactic acid forming group. It is quite generally believed that the products of decomposition produced by these microorganisms are not harmful to man, but on the contrary, are beneficial. If this be true, why all this agitation for a milk with a low bacteria count? This is explained by the fact that our best means of knowing the past history of a given sample of milk is determined by the bacterial content. A high bacteria count must mean one of three things: milk that is either a dirty milk, an old milk or a milk that has been kept at a relatively high temperature. The temperature at which a milk is held for any considerable time very largely governs the type of the bacterial content; that is, a milk held at body temperature gives the best culture media for those contaminated by organisms which came from the cow or from the milkers, while milk held at room temperature will best develop the bacteria found in the food or dusty air. Thus it is found that milk held at a given temperature will, with the development of a high bacteria count tend to a monotype content, as in butter-milk, where there are usually found but two or three varieties of the lactic acid forming group.

Bacteria in milk develop best between the temperatures 70 and 100° F. They do not grow at a temperature but slightly above this and they cease to grow at about 40° F. The bacterial contamination in milk comes from the cow, as the falling of hairs, droppings, and dirt in the milk from the body of the cow; dirt and dust, cobwebs, etc., from the barn and dust in the air; to this the factor of the milker must be added, and here is found one of the very important elements. Whether the milker is clean or not decides very largely whether there be contamination that is harmful to man or not.

Ordinary commercial milk as sold in Chicago is classified under two headings known as "milk bottled in the country" and "can" milk. With the first class the farmer delivers his milk to the factory where it is

* Read before the Chicago Medical Society, Oct. 9, 1912.

weighed and, in many of them, the cans are washed and placed over live steam before being returned to the owner; for this milk the farmer is paid a graded scale ranging from \$1.00 to \$1.90 a hundred pounds, or forty-six quarts. The "can" milk is shipped to Chicago and is picked up at the railway depots by the distributor; for this milk a slightly higher price is paid to include freight and other overhead charges. The collection of these accounts can be insured for two cents a can by certain brokerage firms. A very large proportion of Chicago's milk-supply is produced in northern Illinois and southern Wisconsin. The Northwestern and St. Paul roads bring in more than 65 per cent. of the total, and a much larger percentage of the bottled milk. McHenry and Kane counties are the third and fourth milk producing counties in the United States.

When the milk is brought to the factory the milk is first run through a so-called clarifier; in this process the larger pieces of dirt, hair, etc., are sifted out. This may be a salutary effect from the distributor's point of view, but in this process the clumps of bacteria are broken up and there is an apparent increase in the bacterial count. The milk is then run through the so-called pasteurizing process; these are practically all "flash" method pasteurizers, and the milk is supposed to be heated momentarily to 160° F. That there is a very wide difference of opinion in regard to this question of flash method pasteurization may be learned by the reading of two articles in the *Jour. A. M. A.*; one by Miller and Capps, showing the inefficiency of the pasteurization by a plant at Batavia and a later article by Heinemann in which he considers the pasteurization at said plant efficient, though the records on the machine show a much lower temperature than 160° F. There is to-day but a very limited number of medical men who are willing to stand sponsors for this sort of a "pasteurization." The question as to the advisability or non-advisability of pasteurization is not under discussion. It is this farce of running milk through a machine and labeling it pasteurized, thus giving the laity a sense of false security that is so strongly objected to.

During the summer a new angle of the milk game was brought to my attention, one that I had never heard of before. In conversation with the superintendent of one of these factories, he stated that "last winter was a very bad one for the dairyman. Because of the oversupply of milk it was necessary to put the milk in cold storage until a market could be made for it." So that when one asks how old is the milk that is delivered in Chicago, the best answer is "how old was ANN?"

It may be interesting to know that the average bacterial count made by the Chicago Health Department of all pasteurized milk from August 1 to December 30, 1909, according to Whittaker, was 944,000.

Commercial pasteurization has proven to be inefficient up to the present time so that where one desires a pasteurized milk, it is necessary to pasteurize in the home.

The Chicago Medical Society Milk Commission was organized in February, 1910. At that time there were four farms selling milk supposedly of a grade equal to certified milk; of these three applied for certification; on inspection only one of these was found to be of a standard

that could be accepted. By May the other farms had put in improvements such as entitled them to certification. To-day we are certifying to the product of thirteen farms: Edgewood, Pewaukee Lake, Wis.; Arcady, Lake Forest; Sedgely, Hinsdale; Park, Wern and Pleasant Valley, Waukesha; Brookhill, Genesee depot; Hawthorne, Hartwood, Wakefield and Otis, Barrington.

The Chicago Medical Society Milk Commission certifies to milk of varying fat content; from Holstein cows with a fat ranging from 3.50 to 3.75; from Brown Swiss and mixed herds averaging 4 per cent., and from Guernsey herds with a fat range of 5 to 5.50. The herds have been tested with tuberculin this year by the United States Department of Agriculture and all reactors removed. The bacterial content has been extremely satisfactory. Eighty-two per cent. of samples of milk examined had a content of less than 5,000 per c.c., while some were as low as 100, 200 and 300, and many of 500 and 600.

What is certified milk? It is a milk originally designed for infants and invalids; it is produced under a contract with a milk commission of a county medical society; it is milk with which every precaution has been taken to insure freshness, cleanliness and wholesomeness. The Chicago Medical Society Milk Commission requires that it be drawn from tuberculin tested cows, which show no signs of ill health; cows that have been cleaned with brush twice a day; whose flanks and udders are washed immediately before milking. It is milked into small topped milking pails with gauze strainers; all utensils with which the milk comes in contact must be thoroughly cleaned and sterilized before each milking. The employees handling the milk shall be healthy; must wear clean white milking suits at milking time; they must wash their hands before milking each cow. The food given the herd must be such as meets the approval of the commission.

The milk is examined chemically and microscopically each week. The farms are inspected each month or oftener. The United States government veterinary experts make examinations each month.

The milk is removed from the barn as soon as milked; it is immediately cooled and bottled; all the milk is then immediately packed in cases filled with ice and the temperature thus maintained at about 40° F. until delivered to the consumer.

Certified milk retails for fifteen cents per quart. The extra price is all expended in the extra care and safeguards to the milk. The percentage of profit is less in certified than in commercial milk. It is well to remember that in the increased price of certified milk that the increase in quality far exceeds the extra price. In purchasing most foodstuffs quality is usually the controlling factor. That this is not also true of milk is simply lack of knowledge on the part of the consumer. There are however many reasons for this and to a very large extent it can be traced to the distributor. It is the experience of most commissions that the distributor handles certified milk not because he wants to, but because he must in order to hold his business and as a method to sell his milk for a greater price. Most milk distributors have little sympathy for the move-

ment; their controlling factor is to pay as small a price as possible for any milk and sell it at the highest price possible. Incidentally it might be well to remind one that the farmer receives about 40 per cent. of the cost to the consumer of commercial milk and for certified milk the farmer receives over 53 per cent. of the consumer's cost. Certified milk is distributed to every part of the city and most of the suburbs.

There has been no influence which has done more to draw the attention of the public to the importance of a pure milk supply than the Association of Medical Milk Commissions. In the rural district where one or more farms produce certified milk, there is seen the influence spread out for a bettering of sanitary conditions on all surrounding farms. The production of certified milk has demonstrated the possibility of the production of a clean, safe, raw cows' milk. The commission believes that prevention is better than cure; that milk that is kept clean is better than a half-cooked dirty milk. That the aim must always be for a milk that is produced under sanitary conditions; that so long as the cleaning of dirty milk must be in the hands of untrained men, with percentage of profit as the keynote for their actions, so long will commercially pasteurized milk be an unsafe food.

The certified milk movement has been and is a medical movement; the medical idea is the controlling factor; the medical profession is responsible for this product; the medical profession for self-defense alone, if for no other reason, should be familiar with certified milk, its production and its uses. The medical profession should know whether it is a good thing or not. If it is a good thing then the profession should be active in its propaganda.

155 North Ridgeland Avenue.

THE ESSENTIALS OF THE NEW CHICAGO MILK ORDINANCE *

WILLIS O. NANCE, M.D.

Chairman Chicago City Council Committee on Health

CHICAGO

In submitting this brief paper it is understood that the writer will confine his remarks to the presentation of the essential features or provisions of the recently enacted Chicago milk ordinance and a short résumé of the conditions which led up to its passage. I shall not attempt to discuss the provisions of an ideal law for the regulation of the milk-supply of a city of two and a half million people. I do not know that I would be competent to do so should I have the inclination. Let me state in beginning that the recently adopted ordinance is by no means perfect in its construction or provisions. None of its framers ever claimed that it was, and few, I fancy, are more cognizant of its shortcomings than are those who took part in its preparation. I have, however, no apology to

* Read before the Chicago Medical Society, Oct. 9, 1912.

make for its adoption; its passage was accomplished under the most trying circumstances and its enrolment on the municipal code of Chicago is in my opinion one of the notable victories for public health of recent years.

The circumstances leading up to the preparation and the passage of the ordinance are familiar to many of the profession and to some extent, the public. They are, I believe, of sufficient interest to bear brief repetition here.

The necessity for placing some legislative safeguards about the milk-supply was occasioned by the passage of the so-called Shurtleff Act at Springfield, which act, incidentally one of the most unwise pieces of legislation enacted in recent years, prohibited cities from enforcing the tuberculin testing of cows. The Commissioner of Health discovered that the old ordinance requiring pasteurization where successful tests had not been made was not being observed. He asked for an opinion from the city law department. Then came the decision that left Chicago without protection at the source of its milk-supply. The law department held that the section of the ordinance concerning the handling of milk on the farms was so dependent on the city's right to require the tuberculin test that it was completely invalidated. The authority of the health department in the matter was reduced to practically nothing. The Commissioner called attention to the condition to the Mayor, who, in turn, referred it to the City Council. The communication was sent to the Committee on Health. The rest of the story is familiar to all. The ordinance approved by both the health department and the council committee on health was on July 22, the last meeting of the Council before the summer vacation, defeated. Then following a storm of protest on the part of the public and the press, the special meeting of the City Council on August 15, and the passage of the present ordinance.

Much labor and time were spent in the preparation of the ordinance. It was known that a compromise ordinance would of necessity have to be submitted in order to pass. The committee on health, after many conferences, recommended the present ordinance. It was felt that the ordinance was the best that could be framed at the time and that it would be much easier to amend the act after it once became a law. The ordinance is now in effect and its enforcement already has been the means of improving the wholesomeness of our milk-supply and thereby undoubtedly reducing the number of cases of illness due to infected milk. As time goes on its enforcement will be more positive and general.

The essential provisions of the new ordinance are briefly as follows:

1. Two grades of milk that may be sold in Chicago are established, the one known as "inspected" milk; the other "pasteurized." "Inspected" milk (1) is to be produced on farms inspected and approved by the health department, and shall score not less than 65 points out of a possible 100 (after January 1915, 70), on a score card which is practically a copy of that recommended by the United States government. These points relate to equipment and methods and cover the condition of the health, comfort, feeding and watering of the cows, the condition

of the milk-room, stable and utensils and methods of handling the cows and of caring of the milk from its first production to its storing and transportation.

2. Inspected shall not contain more than 100,000 bacteria per c.c. from October 1 to May 1, and not more than 150,000 from May to September.

3. The farmer or dairyman must procure a department permit subject to the condition that every case of contagious disease in connection with the dairy shall be reported at once.

4. Before June 30, 1913, the producer must file certificates showing that their cows have been inspected by a competent veterinarian and are free from tuberculosis and other infectious diseases.

5. Every milk can must be plainly marked with the serial number of the permit, and the grade of milk and each container must bear the name of the day of the week on which the milk was first enclosed in the bottle.

6. Both grades of milk—inspected and pasteurized—must be kept at a temperature not higher than 60° F. from the time of its production to the time it reaches the consumer. After June 1, 1914, the temperature must be at least as low as 55°.

Milk that meets all of these requirements is allowed to enter the city and be sold without any formality. Milk produced in conformity with standards slightly lower than these, from dairies scoring at least 55 points, and not containing more than 750,000 bacteria per c.c. from October to May, and 1,000,000 from May to October must be pasteurized and may be sold as such, plainly marked as to grade and dated with the name of the day of the week the milk was pasteurized. Pasteurization must be efficient and under the provisions of the ordinance the health department must inspect the pasteurizer and the plant and surroundings. The pasteurizing equipment must be such that 99 per cent. of all bacteria and pathogenic bacteria are killed in the milk treated therein at the temperature specifically provided for in the ordinance. A further section of the ordinance provides that pasteurized milk shall not contain more than 50,000 bacteria per c.c. from October to May, and not more than 1,000,000 from May to October.

Other sections of the ordinance relate to technical details, the requirements for milk, buttermilk, penalty for violation of the ordinance, etc.

I have endeavored to put before you as concisely as possible the main requirements of the new law. It will be seen, and I desire to especially emphasize this point, that the purport of the act is to encourage in every manner possible the production and sale of clean and wholesome milk. The pasteurization feature of the ordinance is secondary. Chicago says to the farmer, "Clean up your farm and milkhouse. Keep your cows in a healthy condition, employ clean and decent methods in milking, keep your utensils sanitary, employ no unhealthy people about your place, have no typhoid or other 'carrier' on the premises, keep your milk cool and ship it to our city cool; we will receive it willingly, and you will have nothing to fear." To the dealer we say, "Maintain decent surroundings, utensils and containers. Buy your supply from a producer whom you

know keeps healthy cows and exercises decency in the production and handling of milk and keep your milk cool."

I am aware that the ideal situation for Chicago would be an exclusive wholesome raw milk-supply. Pasteurization is only an alternative, but under conditions existing here it is absolutely necessary. This city receives its milk-supply from more than 12,000 farms located in four states. The municipal authorities have no legal jurisdiction outside the limits of the city. Inspectors of the health department, however, visit the surrounding country and check up conditions on the farms and do much towards educating the producer in sanitary regulations. The only legal club the city has is that it can refuse to receive milk that does not come up to certain standards which it has established by act of the Council.

Please note also in considering the ordinance that it does not allow even the pasteurization and sale of milk produced on farms that score below 55 points, or which has a bacterial content of more than from 750,000 to 1,000,000 per c.c. Milk below that grade can be sold under no circumstances, pasteurized or not, in Chicago.

In closing, I want to reiterate what I said in my opening remarks, that the new milk ordinance, while not ideal, and it never can be so long as certain legislation which I have referred to remains on the statute books of Illinois, yet, I believe, will be the means of providing our city with an adequately safe milk-supply.

Chicago's crusade for wholesome milk should go on. An act requiring the tuberculin testing of all cows within the state should be enacted, and the prohibition of the dumping of tuberculous cows into our commonwealth from neighboring states must be enforced. The Chicago Medical Society and the Stock Yards Branch are potent forces in molding public opinion, and well-directed efforts along this line will result in much good.

THE SLUDER METHOD OF TONSILLECTOMY *

ARTHUR M. CORWIN, M.D.

CHICAGO

I wish briefly to speak of the modern, epoch-making operation, devised by Dr. Sluder, of St. Louis, for the removal of tonsils. I am convinced, after an extended experience with it in all sorts of cases and all sorts of tonsils, that this method is the best there is for the vast majority, if not all cases, and, therefore, destined to replace to a large extent all other methods within the next few years. I therefore desire to commend this admirable technic most heartily—that those now unfamiliar with it may be won over to its employment. Not only the method, but the man responsible for it, Dr. Sluder, is deserving of warm expression of appreciation for what he has given us.

* Read before the Chicago Medical Society, Nov. 6, 1912.

Given, then, the distinct indications for tonsil removal (which are not under discussion to-night), with the further premise that we are not advocates of wholesale, indiscriminate tonsil surgery in the absence of such indications, we shall rest on the postulate that if they are to be cut out at all, it should be done thoroughly by tonsillectomy — not tonsilotomy. I desire to say, furthermore, that tonsillectomy is not an operation that, so far as the patient is concerned, is a trivial matter, which can properly be done in the office or dispensary, or college clinic, and the patient sent home. For, though I am aware that such is the practice of some operators (and we have all been guilty), and though many patients do go home direct from operation and experience little or no hemorrhage or other serious complications, it is equally true that severe hemorrhages occur unexpectedly as a delayed or secondary matter within the first twenty-four or forty-eight hours. It is better, therefore, to give the patient the benefit of the doubt and subject him to the added slight expense of a hospital bed rather than lay him open to unreasonable danger and anxiety, and lay the surgeon himself open to resulting criticisms. But if other arguments were lacking, the operator's freedom from anxiety and loss of sleep is argument enough for hospital treatment of these cases.

Very well — now that we have the confidence of the patient — how shall we take out these offending organs? Remove them in the quickest, easiest, safest and surest way possible. And I am here to say, perhaps somewhat dogmatically, that the Sluder method fills this bill of particulars, performed under a general anesthetic; though it can be done, not without considerable momentary pain, under local anesthesia.

Dr. Greenfield Sluder, of St. Louis, whose work is widely and favorably known among laryngologists, first described the procedure and his instrument at the St. Louis meeting of the American Medical Association, June 9, 1910. The paper was published in the *Jour. A. M. A.*, March 25, 1911. The instrument which he described is an evolution of some six years' experiment and study. It has a stout handle attached at a convenient angle to a strong shaft, long enough to permit free manipulation in the mouth with the fingers of the other hand, and not too long to impair its leverage. At its distal end is a fenestra, oval transversely, across which moves a guillotine blade operated by the thumb of the holding hand. The fenestrae are of three sizes, a large, a medium and a small, which are interchangeable. The large and medium are most applicable. The blade at first made sharp was dulled by advice of Dr. Sluder, as better adapted to dissect its way along the line of least resistance between the capsule and the adjacent muscles, and calculated to give less hemorrhage than a sharp one, its edge acting essentially as a fine snare acts. The guillotine is a modification of the Mackenzie tonsilotome, which has been in use for a generation or more and takes its origin from much older fenestrated guillotines, dating back as far as 1783, when Dr. Benjamin Bell published in England his description of his uvulotome. Dr. Physick, of Philadelphia in 1827 devised the instrument of which the Mackenzie tonsil guillotine is a modification. Dr.

Fahnestock, also of Pennsylvania, in 1832, gave us the ring knife guillotine. This idea, as also pointed out by Dr. Sluder, is a very old one. To originality in this, he lays no claim. But he does lay just claim to an entirely new method of its application. His instrument is much stronger and better adapted for the work than its forebears. Neither does he claim priority in the performance of tonsil enucleation with its capsule. This has been in vogue now for many years. Soon after the appearance of Sluder's presentation a few good men were quick to take it up and try it. Among the pioneers in this direction should be mentioned Dr. Wm. L. Ballenger, of this city, who was the first man in Chicago, I believe, to use this method. Following on his heels were Dr. Beck and the writer. Later Drs. Friedberg, Bergeron and others have employed it. These gentlemen can best speak for themselves.

The method of employing the Sluder guillotine differs radically from former procedures. Instead of applying its proximal surface to the gland with shaft parallel and near to the buccal surface on the same side, he enters the shaft obliquely across the mouth cavity from the opposite side, applying the distal surface of the terminal ring below and behind the tonsil, and with a scooping motion displacing the gland and the surrounding tissues upward and forward toward the fixed point of the alveolar eminence of the lower jaw. This action alone often suffices in circumscribed firm tonsils to push them through the ring and the blade of the guillotine does the rest, completely enucleating the gland together with its capsule. But in most cases the last vestige of the tonsil is crowded through the fenestra and the anterior pillar is felt as a flat smooth band across the front of the aperture. The gland may be seen and felt protruding from the opposite side if the handle of the instrument is moved to allow inspection. By forcing home the guillotine knife the removal is completed. The slight aid of the palpating finger is needed to detach the gland in exceptional, fibrous, adult cases. There is no need of preliminary dissection even in the most buried tonsils; no need of tongue-depressor or other instruments to accomplish removal; and though a headlight or other efficient light is a part of the ordinary armamentarium, tonsillectomy by this method may be done with precision without a light, solely by the sense of touch, as we have demonstrated several times when our electric headlight gave out at a critical moment.

The whole operation can be done within a few seconds of time, and the patient with hemorrhage stopped, up and away to his bed in the hospital within four or five minutes from the beginning of anesthesia when oxygen and gas is used. There you have "Sluderization" which differs radically from all previous methods of operating. All other older procedures practically aimed at *pulling* the gland from its bed, dividing its surrounding attachments with knives, scissors or more or less blunt dissectors and completing the operation with the snare or otherwise. The Sluder method on the contrary consists in lifting the tonsil upward and forward and *pushing* it through the ring by aid of the apposed mandible, and the pressure of the surgeon's finger—the latter is important, and a definite part of this new procedure. All instruments, therefore, involv-

ing a fenestra employed in this way, whether finally severing the gland with sharp or dull guillotine pushed or pulled, or with the snare, do the Sluder operation, irrespective of the men's names that may be attached to this or that instrument. And none I think are quicker to sound the praises of Sluder, himself, than those who have made such modifications in instrument and accessory technic and who have employed this method of tonsil enucleation.

A word as to the modified Sluder idea, as it has been expressed in steel. All these instruments have good features, but none of them changes the principle of the operation as first described by its author. Dr. Ballenger has added a power handle of great value, most admirably executed by the instrument makers V. Mueller & Co. This is, I think, the best combination on the market. Dr. Sauer, of St. Louis, turned down the thumb-piece, dulled the guillotine blade and used a thumb screw to drive it home. It is a powerful instrument. Later Dr. Ballenger suggested two blades, one dull, to primarily dissect and the second sharp, to finally sever the attachments. It has added clumsiness without improving on the advantages of the original. Dr. Beck added to a Pierce-Mueller snare a strengthened Vedder ringed tip, grooved on its inner surface for carrying a snare and effects good "Sluderization" with this instrument. It however loses in convenience and power of leverage and requires the nuisance of adjusting snares with their occasional breaking, etc., calculated to delay, and to tax the patience of the operator, and prolong the anesthetic and manipulation of the patient.

All of these modifications contemplate lessened hemorrhage and fulfill this aim to some degree. Sluder has added to the original model what he terms a "Dog," by the leverage of which, immense power can be employed in thrusting home the blade. Of these instruments, take your choice or add your own improvement, all perform "Sluderization." The hemorrhage is no greater in "Sluderization" than by other methods of dissection, without the aid of adrenalin. It comes immediately (and so seems greater), when the tissues are finally severed. It may be controlled by the usual surgical means. To this end even the writer has rushed into the field with a tonsil hemostat. It has been used practically as a routine measure by me in all cases during the past eighteen months. It is of great value, not only to control secondary, or continued hemorrhage, but when immediately applied, after the removal of the first tonsil, maintains a practically bloodless pharynx during the excision of the second tonsil and greatly shortens the use of anesthesia. The application of another hemostat to the site of this second, has in our experience very much reduced the total amount of bleeding.

The virtue of the Sluder operation is to be based on the exhibition of the removed glands, the clinical demonstration, and the economic benefit to the patient. The glands we have here on exhibition. The reports from over five hundred tonsils enucleated by this method have tallied with the best work the other methods give. And as to clinical demonstration, I shall be glad to show any of you who may be interested, who will come to the West Side Hospital, where I operate every Saturday morn-

ing, beginning at about 8:30, handling nothing but tonsil and adenoid cases, employing oxygen and gas anesthesia and the Sluder idea. And, so far, I have not had cause to resort to other means. I am certain that as this idea takes hold of those who wish to do tonsil surgery (and there is plenty for all of us) it will largely relegate other methods to the high shelf and greatly decrease the variety and number of instruments which shall be marketed for tonsil work by the instrument makers.

In conclusion allow me to say that this method will probably be criticised by some of you who are here, from various motives. Possibly you will attack it because you are doing good work with knife, seissors and snare, or otherwise, and think that well enough should be let alone. I am, however, going to prophesy that in the discussion to follow he will decry this operation most who knows little or nothing about it from personal experience. I say, gentlemen, try it first and criticise afterwards on a sound basis of objection if you can find any.

15 East Washington Street.

DISCUSSION

Dr. O. T. Freer: The Sluder operation has an advantage over tonsillotomy with the ordinary tonsillotome that it removes the usual, non-adherent hypertrophied tonsil completely. It is not possible as Sluder operators admit, to be sure of excising with it imbedded tonsils which have acquired fibrous adhesion with their surroundings as the result of chronic peritonsillitis, peritonsillar abscesses, or previous operations. The method therefore has the lack of adaptability common to all mechanisms intended by a mechanical act to supplant the painstaking and intelligent work of the hand and knife, which can fit themselves to all anatomical conditions. Those advocating such mechanisms always have in mind a typical tonsil for which the implement is constructed, and ignore the many changes produced in the tonsil and its surroundings by pathologic conditions which make the operation of tonsillectomy one requiring great versatility.

The demands for a correct tonsillectomy are: To leave no part of the tonsil behind to cause future attacks of tonsillitis or peritonsillar abscess; to cause the least possible reaction; to avoid sepsis and above all injury to the muscles of the palate and to avoid the sacrifice of the plica triangularis. The plica triangularis is the fold of mucous membrane which continues the anterior pillar inward from the inner edge of the palato-glossus muscles and covers the anterior and inferior face of the tonsil. This fold should be saved in order that it may line the tonsillar fossa and hinders their motions. After removal of the tonsil a mere slit or the palato-glossus and palato-pharyngeus muscles upon each other. Where too much of the mucous membrane in front of the tonsil has been sacrificed the result is a firm retracting scar which firmly unites these muscles, obliterates the tonsillar fossa, left empty by the removed tonsil, and so preserve the free motions of oval recess should be seen where the tonsil was excised, not a broad wound such as Sluder demands in his article. All the above demands are satisfied by the operation of knife excision of the tonsil which I described in the *Jour. A. M. A.*, 1909, p. 547-552. On the other hand a consideration of the Sluder instrument and method will show how ill adapted they are to satisfy these requirements and how clumsily at best they supplant the exact work of a clean dissection. The Sluder operation relies upon finding a tonsil that moves loosely enough in its bed to be expressed through the ring of the instrument like a comedo. The bulging tonsil is then ploughed or torn from its neighborhood by a dull chisel blade. While the Sluder instrument may take away a typical tonsil completely, it is physically impossible that it should remove the little cicatricial tonsils, which extend up into the soft palate, are hidden from view and are so often the cause of peritonsillar abscess. Such tonsils even a sharp knife severs with difficulty from their cicatricial bed.

Reaction after any operation is chiefly in proportion to the amount of violence inflicted on the tissues left behind. The Sluder operation necessarily involves forcible bruising of the muscular bed of the tonsil against the lower jaw and evulsing the tonsil with the crushing force of a dull blade. Common surgical experience shows that bruising and tearing lead to more reaction than clean cutting.

As to sacrifice of mucous membrane, Sluder himself says in his article: "Further examination of the specimen reveals that a little of the free edge of the anterior pillar, including a few fibers of the palato-glossus muscle, is attached to it (the tonsil). I always remove this bit of the anterior pillar because it leaves a more open wound and a more open fossa when healed." There is no reason for such an open wound, as experience has shown me, and such a wound is sure to change into the retracting scar so characteristic of the loss of integument upon the palate.

In regard to sepsis. Many tonsils are chronically septic. To squash down on such with a powerful ring will necessarily force pus germs into the lymph channels, especially in cases where a concealed chronic peritonsillar abscess exists, as is not uncommonly the case. I have been calling attention for some time to the danger of sepsis from forcible tonsillectomy. Three deaths from this cause came to my notice and septic fever with sloughing is not uncommon. The Sluder operation is a forcible one and as such well designed to excite sepsis in predisposed cases. Considering the great amount of blunt tonsil enucleation being done serious septic consequences are surprisingly rare, but are sure to be encountered in a large series.

I can not see how a ring, forced over a tonsil, can produce the very necessary division of the tonsil from the posterior pillar which the knife creates with such accuracy.

The necessity of general anesthesia for the Sluder operation, as acknowledged by Dr. Corwin, sufficiently displays its character as a forcibly painful one. In contradistinction to this I have often excised tonsils by my method under local anesthesia from children, from 6 years old upward.

It may be stated that my arguments are theoretical and not based on experience. In a sense I have had experience, the general surgical experience which has given me the judgement to see the weak points in a measure proposed, and to allow for the early optimism which clings to the beginning of most new surgical things and which dies away when these weak points have become common knowledge. Nor do I feel it any more my duty to try new things in which I can see objections taught me by experience, than to try to draw screws with a claw hammer, even if enthusiastically advised to do so, for I know that I should mar the wood-work less with a screw driver.

The Sluder operators all admit cases unfit for their method; I admit none that are unfit for mine, which can remove all tonsils with the least injury and does not do harm by ineffective trials.

Dr. J. C. Beck: I would like to agree with Dr. Freer that dissection is the ideal method; I did that operation until this method appeared. Dr. Freer will probably do the same thing before long. He is doing harder work than I am doing now. I have yet to see a single case of removal of the tonsil with my snare, a modified Sluder instrument, that had as much reaction as the mildest reaction following dissection. That does not mean two or three cases but hundreds of them. Clean dissection and time-consuming operations do not enter into the discussion at all.

The point I wish to make is this. Tonsil operations are done a great deal by general practitioners, and by the dissection method which they undertake, there is a great deal of destruction of the palatal muscles, which is not the case when my snare is used. I defy anyone to show microscopically a single muscle fiber on a tonsil which I remove with my snare. With the instrument cutting forward, first devised by Sluder, such a thing may occur, but not with the snare. You may leave a margin of lymphoid tissue, but you will not cut away any of the muscle fibers.

My Technic (illustrating).—I take the lower pole of the tonsil, raise it up and by pressing down, the entire mass of the tonsil is forced through the ring. By releasing the lever, you push the tonsil further out and by locking you erase the tonsil, and the smoothness of the capsule can be shown after the operation.

Speaking of hemorrhage. I do not care what method you employ, you will have some bleeding. The immediate introduction of a tampon by means of any clamp will facilitate the control of the hemorrhage. If you remove the clamp too soon it will bleed again and in some cases have to employ hemostatic forceps. There are other reasons for hemorrhage than the removal, such as the pathologic conditions for which the tonsil was removed, or the difference in vascular distribution.

So far as 98 or 100 per cent. of successes are concerned, the condition of the tonsil you have to deal with makes the percentage of success. My rule is this. If I can push the tonsil through the ring of my instrument this is the method of removal to use. If I cannot, I simply dissect the tonsil out. Gas anesthesia is not complete enough to do this operation in the majority of instances, because the muscles cannot be relaxed sufficiently. If you are going to do the operation as it should be done, place the patient completely under ether anesthesia.

Dr. P. J. H. Farrell: In using the McKenzie tonsil instrument we use both hands, which makes the operation more simple as well as more accurate. McKenzie always used two hands, pushing the lever with the thumb of the other hand, which keeps the instrument solidly against the tonsil. No matter how you use it with one hand, the instrument will pull away from the tonsil when you push the lever with the thumb of the holding hand. The Sluder instrument differs but slightly from the McKenzie, which has been used for a quarter of a century. The Sluder operation is of course an entirely different operation.

As for the anesthesia, the fatal cases occur with general anesthesia, rarely with local anesthesia. The death rate following tonsillectomy under general anesthesia has in five years jumped from practically nil to a greater mortality I believe than that for the abdominal operation to remove the appendix. I of course refer only to the work of men doing this special surgery. Is the result worth the sacrifice? I don't think so.

I have given up using general anesthesia for tonsil operations. I use one-tenth of one per cent. of cocaine, ten to twenty drops injected into the tonsil and remove but one tonsil, waiting a week to remove the second tonsil. By this method the patient has no pain or inconvenience after twenty-four hours.

Dr. E. Pynchon: I have not as yet used the Sluder method because I have other methods which for many years have always filled the bill. Many of my patients in the last twenty years have been those who have had an operation previously. A tonsillectomy has been done and the lower portion of the tonsil left behind, so it is the removal of that portion of the tonsil that I have been asked to do. When you desire to make a circling cut with a straight instrument, the tendency of the instrument is not to cut deep in, and that explains why so many of these tonsillectomy cases have had to have the base of the tonsil removed after the use of the McKenzie tonsillotome.

It is not alone a matter of removing the tonsil, but there is a lot of peritonsillar tissue under the anterior pillar which it is as desirable to remove as the tonsil itself. It is quite apparent that by the Sluder method this cannot be removed.

After tonsil removal I am a strong believer in the necessity of after-treatment. There does not then occur that uniting of the anterior and posterior pillars mentioned by Dr. Freer.

As to hemorrhage. Dr. Beck said that there is no way to remove the tonsil without hemorrhage. I wish to differ with him. By the cautery dissection method I have removed about fifty tonsils during the last five or six years without the loss of a single drop of blood. I have been doing this cautery dissection for twenty years. It took me twelve or fifteen years before I began to have no hemorrhage at all.* So there is a method of removing the tonsils without hemorrhage, and I would like to see any other method by which a bloodless tonsillectomy can be done.

Dr. H. M. Thomas: An excellent mechanism usually appeals to every one and the vast degree of ingenuity should be praised highly. The subject under discussion is the Sluder operation, but as an aside, I wish to plead for conservatism in regard to tonsil operations in general. That has been forcibly emphasized by McKenzie of Baltimore in a recent article on "The Massacre of the Tonsil." There is no doubt that to-day there exists such a state of affairs, in which the tonsil is massacred, and it is the result of an enthusiasm regarding its proper removal which is not at all warranted.

Dr. Corwin (closing discussion): As I prophesied, it is the man who never used the method who jumps it hardest. Dr. Freer in his talk gives the impression that in this surgical field he is a standpatter and reactionary. Let him beware the fate of Taft. Does the doctor, lawyer-like, bow the knee to precedent? Is he willing to leave well enough alone because what he thinks well enough happens to be his method, his instruments and his technic? We are surprised, and specially so when he says that the operation should be labeled "Mackenzie-Sluder" as if he would hyphenate both name and honor. This is ungenerous. He theorizes about the danger of squashing or squeezing septic material into the muscles with dire effect. But how unlikely such an occurrence, even from a speculative point of view—for the capsule is a firm, fibrous barrier, much more impenetrable than the tonsil itself. So any septic material even deep-seated, would upon being pressed from the direction of the underlying muscles be expected to escape if at all in the line of least resistance, forced through the crypts into the mouth. And, as a matter of fact, that is what does occur, frequently the buried tonsil being literally turned inside out and its contents expressed into the pharynx. Furthermore, no such accident as the one suggested by the doctor has been encountered as a result of "Sluderization." This is merely one of Freer's scare headlines with no basis in fact. Like Don Quixote, he likes windmills. In this connection, be it said that unless we mix brains and judgment with our surgical work, we had better quit. Why should one attempt, for instance, to needlessly crowd a large tonsil through the smallest fenestrum with uncalled for stress when a large fenestrum is available and takes the gland easily, entirely eliminating even the fanciful, hypothetical danger mentioned by Freer. Again, judgment will tell us when operation either by Sluder guillotine or sharp knife or scissors should be postponed because of recent infection or for preliminary treatment. Dr. Freer further theorizes about the danger of tearing or cutting out muscular fibers of the palato-glossus. Sluder speaks of doing this on purpose. But it is unnecessary. It is no more apt to occur than in any operation, and I have never seen it yet in 500 tonsils Sluderized. And if you will inspect the dozens of specimens of tonsils which are being passed around here, you will see how clean all the capsules are. In fact, there is in my experience less danger of muscular injury by Sluder's method than by any other dissection.

Dr. Freer pronounces the Sluder guillotine suitable only for the man who fears or is unable to do what Freer calls the scientific method by knife dissection. My answer to this is, that not only I, but many other operators quite as familiar with knife dissection as he and capable of doing quite as good work or bad, have laid aside the older methods championed by Freer for the newer, Sluder's, because they are convinced that a skillful use of his guillotine, or some of its modifications, will deliver the goods quicker, safer and more uniformly well. We speak from an extended experience with both methods. Freer only from one.

In the evolution and progress of things, we must expect to make instruments, devise technics to-day and tie our names to them, and to-morrow see them upon the scrap heap, because of the newer and the better.

Finally, the doctor infers that I am satisfied with 98 per cent. of success, because parenthetically, I estimated that the Sluder method would satisfy indications in that percentage of cases. So far, it has been so in a hundred per cent., excluding the first few cases while I was learning how. I may never meet the hypothetical 2 per cent. in which knife dissection would be preferable. But when I do, I shall hope for judgment enough to borrow a few of Freer's knives to use.

Dr. Pynchon is one of the pioneers in tonsil dissection by cautery. Used with discretion, his method has given excellent results; but it is now upon the shelf with other old-time good things.

In conclusion, if anybody imagines that the Sluder guillotine can be properly used without the need of brains and skill, and that practice is a needless factor in attaining perfection with it, let him guess again. We say once more, come and see it done, and try it out yourself before you damn it with faint praise, or just plain damn it.

THE INFLUENCE OF SPINA BIFIDA ON PROLAPSE OF THE GENITALIA *

HENRY F. LEWIS, M.D.

Professor of Gynecology and Obstetrics in Bennett Medical College, Medical Department of Loyola University.

CHICAGO

While the great majority of cases of prolapse of the uterus and other organs of the female pelvis are caused by the traumatisms incident to labor, there are yet some wherein the history of no such traumatism can be traced. Genital prolapse is of the nature of a hernia. The intra-abdominal pressure constantly tends to force downwards and outwards the contents of the pelvis and is prevented under normal circumstances by the resistance of the pelvic floor, mainly by the strength and tonicity of the levator ani muscle. The passage through the vaginal canal of the head of the child often tears the muscle and the fasciae of the pelvic floor and sometimes weakens these structures by undue stretching. The walls of the hernial canal are thereby weakened and eventually the intra-abdominal pressure may force the contents of the abdomen and pelvis through the defect. The pelvic contents which are right in the way and therefore usually the first to start outwards are the uterus and vagina. In some instances the vaginal walls prolapse primarily and drag the uterus after them, in others the uterus comes down through the vagina and secondarily inverts the vaginal walls. In all cases there is a general downward tendency of all the pelvic organs; bladder, uterus, adnexa, rectum and intestines. When the pelvic floor is defective enough and the intra-abdominal pressure is sufficient the hernial prolapse of the uterus and vagina will occur regardless of the condition of the suspensory apparatus of the uterus, namely: the broad, the utero-sacral, the vesico-uterine and the round ligaments. In just the same manner in inguinal hernia, for instance, the intestine will be prolapsed into the inguinal canal or into the scrotum regardless of the length or shortness of the mesentery.

Prolapse may occur in women who have no visible lacerations or traumatisms of the pelvic floor, may even occur in nulliparae or in virgins, may even exist in young children or in new-born infants. In these cases there is usually congenital weakness or disease of the pelvic floor, especially of the levator ani. In many of them the ultimate cause can be proven to be in the existence of a spina bifida. In some instances the spina bifida will be apparent to inspection or to palpation, in others

* Read before the Chicago Medical Society, Oct. 9, 1912.

it may be occult, only to be demonstrated by dissection. In many a growth of hair over the sacral region is a stigma of the spina bifida beneath. For a long time the coexistence of congenital prolapse and of sacral spina bifida has been noted and has often been thought to be merely coincidental. Of late it has been proved to be causal rather than coincidental.

Dissection of the levator ani muscle in cases of sacral spina bifida in fetuses and infants shows that the direction of the muscle bundles is abnormal. They run more towards the coccyx and downward so as to make the pelvis more funnel-shaped. The pale yellowish color of the muscle instead of the normal red, and the flabbiness of the fiber bundles show that we are dealing with a muscle which is much disordered in its innervation and consequently in its nutrition. The whole muscle is seen to be thinned and to contain much fat. Microscopically, signs of degeneration in the fibers appear, the small bundles are inordinately thin and in many places replaced by fatty tissue and by connective tissue. The stripes are not marked, the nuclei are more numerous and smaller in individual size. Such conditions in the muscle of the pelvic floor are only observed in those cases in which the fourth sacral nerve, the motor nerve for the levator ani, falls within the region of the spina bifida. The pressure of the fluid within the spina bifida, the traumatism from the exposed situation, or the defective development of the nerve because of the defect in the spinal covering has caused a partial paralysis of the nerve and consequent degeneration in the muscle supplied by it. Thus we have a levator ani muscle not injured by labor but one congenitally defective. Therefore the muscle does not properly perform its chief function of acting as the pelvic diaphragm and of holding in their proper places the contents of the pelvis. In other words there is a weakness of one of the muscular supports of a natural canal opening out of the abdomen and therefore a tendency to a hernia whenever the intra-abdominal pressure becomes sufficient to force the abdominal or pelvic contents through the poorly defended portal. The condition is similar to that in inguinal, femoral or other hernia.

Sagittal frozen sections of new-born infants show that normally the uterus and bladder are high in the true pelvis, even extending well into the abdomen itself above the level of the symphysis pubis. In the infant with spina bifida the uterus is sunken far down to the bottom of the pelvis, the bladder lies entirely within the true pelvis while the vaginal walls are inverted about the prolapsed cervix. In these cases the perineum is somewhat bag-shaped and sagged forwards, the anus lies deeply in a furrow and is usually gaping. The picture is so characteristic that often the diagnosis of occult spina bifida can be made from the appearances in the perineum alone. Similar conditions are observed in male infants with spina bifida. The bladder lies in the pelvis behind the symphysis instead of considerably within the abdomen as usual. The pocket of peritoneum between the bladder and rectum, as well as the prostate, lies abnormally low. In all these cases, male and female, no abnormalities may be found in the connective tissue supporting apparatus of the pelvic organs.

Frequently no symptoms will appear to indicate prolapse during the early life of women affected with congenital prolapse and only with the appearance of pregnancy or even after labor will the condition be recognized. As the uterus becomes enlarged in the early months of pregnancy it may manifest its prolapsed condition by causing undue disturbances of the bladder or rectum.

It may press upon the vulva and perineum or even appear protruding more or less from the vulvar orifice. Proper treatment by tampons, pessaries or otherwise will usually hold the uterus, with the other pelvic organs, in place until the uterus becomes large enough to lie well up in the abdomen and become supported by the bones around the superior strait. After the labor, even although traumatism to the perineum has been trivial, the prolapse may recur. This is especially likely after a month or two, when the woman goes about her duties and increases the intra-abdominal pressure. Indeed the pelvic floor is already so much relaxed by the muscular weakness due to the spina bifida that serious lacerations of the perineum and pelvic floor during labor are less likely to occur than in normal cases.

Nulliparae so affected with potential congenital prolapse may experience no symptoms calling attention thereto until later life, especially after the menopause. The increase of fat in the body, especially the fat within the abdomen, increases the intra-abdominal pressure while the advance of age weakens the supporting powers of the pelvic floor and prolapse becomes sufficiently established to be noticed.

In these cases of congenital prolapse, either in women who have borne a child, or in nulliparae, plastic operative measures upon the pelvic floor may fall far short of success. The levator ani and the fasciae, made taut by the operation, easily stretch again, because of their weakened condition, under the influence of intra-abdominal pressure. Many a failure after operations performed *secundum artem* is caused by the impossible handicaps inherent in the condition of the tissues operated upon. Therefore the cautious gynecologist will not promise too much from operations performed for the relief of congenital prolapse.

THE PATHOGENESIS OF THE GLANDULAR OR SECONDARY FORM OF INFANTILE TUBERCULOSIS

CLINICAL IMPORTANCE, ETIOLOGIC FACTORS, PROPHYLACTIC MEASURES,
ITS FAVORABLE PROGNOSIS AND RATIONAL TREATMENT *

JOHN RITTER, M.D.

CHICAGO

As our knowledge of the growth and development of the various tuberculous processes in the human organism is broadening, it becomes more apparent, that a classification in keeping with these advancements

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is necessary to a more correct understanding of these different mutations; that a clearer conception of these tuberculous changes, from its very inception, or the very beginning of infection of the virgin organism, to its full development or final stage, as we see it in cases of advanced phthisis, may be had.

Most modern clinicians and teachers from close study, observation and investigation hold to the theory that all primary tuberculous infection, with but few exceptions, is infantile, occasionally prenatal, chiefly post-natal, and that this infection, if extra-uterine occurs in very early life, usually either in the first months of the child's existence or within the fifth or possibly the sixth year; that the primary foci of infection in the organism are usually single, generally aerogenous,¹ found within the lung itself near a small bronchus, but mainly subplural; that after a period of incubation of shorter or longer duration the regional lymph-nodes, if within the parenchyma of the lung, the intrapulmonary if outside of the lung, if subplural (and this is most frequent), the bronchopulmonary, epibronchial, tracheobronchial and parabronchial, extending ultimately up to the cervical glands, are secondarily involved, and that all subsequent forms of tuberculosis, like pulmonary, osteal, meningeal and others, are only a tertiary manifestation of the disease. The study of this primary glandular or secondary tuberculous manifestation of the disease as it is usually seen in children, shall be our chief theme. For a clearer conception of this form of tuberculosis as is usual in children, it will be necessary that we consider first how, in which way and at which period of the infant's existence this infection takes place. The theory of heredity as such or the direct transmission of the disease from parents to the offspring is no longer tenable. So-called hereditary phthisis, as we so often see it in certain families, is only the evidence or proof of a massive or heavy infection in early infancy, which infection in later or adult life is again transferred as a massive infection to the progeny. As change of environments and habits will completely obviate this family infection, the directly opposite teaching, the non-heredity of tuberculosis, is now accepted.

At present two views are entertained as to how this infection may take place. One theory holds that the child is infected with the tubercle bacillus before birth,² intra-uterine, the other (and this has the greater number of supporters) is that the child is born entirely free from all tuberculous infection, is non-tuberculous, but is infected extra-uterine or postnatal, invariably from a tuberculous adult. That this tuberculous infection is almost entirely brought about after birth, is strengthened by the fact that in post-mortem examinations of the newly born very seldom are tuberculous lesions demonstrable. In exceptional cases it has been shown, by means of the antiformin method, that bacilli are present in the placenta of the tuberculous mother, and we can very easily conceive the entrance of bacilli, through a diseased placenta, into the circulating fluid

1. Ghon, Anton: *Der Primäre Lungenherd bei der Tuberculose der Kinder*, Berlin, 1912.

2. v. Baumgarten: *Tübingen, International Medical Congress, Budapest, 1909.*

of the fetus, and being deposited infect the yet unborn child, but this is rather the exception than the rule.

We are now in a position to prove positively that in the greater majority of children born from tuberculous parents, or from children reared in tuberculous homes, that the infection does not occur intra-uterine, but postnatal.³ By means of the cutaneous tuberculin test we can now show definitely at which age this infection has taken place. Newly-born babies do not react at all to the test; the reaction is seldom before the sixth month, or perhaps not until the first year; by the sixth year nearly 50 per cent. of all children react, and nearly 95 per cent. at the age of puberty. These cutaneous tuberculin findings have been corroborated by post-mortem examinations,⁴ showing that the infection is seldom in the first year of life; that between the ages of 1 to 5 years about 20 per cent. are tuberculously infected, and that at puberty in about 90 per cent. macroscopic and microscopic tuberculous lesions are demonstrable; consequently, from these observations we are justified in assuming that the infant, with few exceptions, is born free from all tubercular virus, is infected in the very early months or years of its existence from without; that this early infection is usually slow, gradual and oft repeated with but few bacilli at any given time; hence infantile tuberculosis is primarily a question of quantity; how many virulent bacilli and in what intervals of time have the bacilli entered the virgin organism.

More direct evidence, if wanting, of the non-infection of infants before birth, not intra-uterine but extra-uterine, is the fact that twins born of a tuberculous mother are not tuberculously infected; that if one is immediately after birth removed from its mother, placed at once in a non-tuberculous home or with a family free from tuberculosis, under changed environments and more favorable conditions, it will escape entirely every infection; whereas the other child remaining with the actively tuberculous mother will be quickly infected and succumb to the disease in very early infancy. The possibility of prenatal infection, infection *in utero*, has in recent years been considerably strengthened from various reports of having demonstrated the presence of tubercle bacilli in the placenta. That a tuberculously diseased placenta may not be a barrier to the entrance of tubercular virus into the fetal circulation must now be accepted; even a non-tuberculous intact placenta in exceptional cases will permit bacilli to pass its walls and enter the embryonal circulation. That this may take place not only in the case of the active advanced tuberculous mother, but at any stage of the disease can now be assumed, as the presence of tubercle bacilli in the circulating fluid can now be positively demonstrated throughout all the stages of the malady. This has been verified by accurate laboratory investigations and by competent diagnosticians.

From all this we must conclude that the infant is occasionally tuberculously infected intra-uterine, but as a rule is born free from all tuber-

3. v. Leube: Ueber die Bekämpfung der Tuberculose im Kindesalter, München, med. Wehnschr., 1912, No. 31.

4. Naegeli: Wien.

culons infection, and if infected it is usually slow and gradual, from a tuberculous environment, in the main in the first years of its life. If this infection is small in amount, small in the number of bacilli taken into the organism at any given time and only occasionally repeated, it will bring about in the so-infected organism a gradual immunity, a cure or arrest of the tuberculous process, and that a complete healing of the tuberculous lesion will give a certain amount of immunity against a future tubercular phthisis in adult life. If, on the other hand, this infection is in large amounts, many bacilli entering the body at a given time, virulent and oft repeated, which so frequently occurs in the homes of the careless tuberculous, then the infection is massive and the child will succumb early to a generalized tuberculous infection, because in these tender years it has not yet developed sufficient resisting power, has not yet acquired a protective immunity; hence immunity as we now understand it in its relation to tuberculosis, is a protection from a moderate reinfection of an organism already primarily but mildly infected, the protection being assured to an infected organism against future moderate reinfection.

This fact is frequently observed in children with healed cervical lymph-nodes, in whom, after healing, we often note a degree of protection against future tuberculous processes. It follows from the foregoing observations that this so acquired immunity in children is only a relative protection, not absolute, for, if the tuberculously infected person is occasionally reinfected with a small amount of bacilli, the relative immunity against a similar small amount of virus is maintained, but if infected with a large amount of virulent bacilli, a so-called massive infection, a very active tuberculous process is established, terminating usually in early death.

Infants and young children as a rule are almost invariably infected from adults and not from other children; consequently, prophylactic measures against this tuberculous infection must be very energetic and thorough, and should be instituted at the very earliest period of child life, so as to protect it against this adult or family infection. Hence, it is very evident that this fight against tuberculosis, in the very early life of its victims, demands our most serious attention. We must guard well against infection in the home of the tuberculous, protect the child against infection from its father or from its mother, or perhaps from a possible infection from a tuberculous family in which the child is being reared. We can truthfully make a broad assertion when we say that annually more infants and children are tuberculously infected from the father than from the mother, and this, notwithstanding the fact that the mother, at the birth of the child, may have been actively tuberculous. The tubercular mother, if apprised of the infectious nature of her disease, will make every sacrifice of personal comfort and convenience to avoid the infection of her child to protect it against this dreaded and insidious disease, but, usually, not so the selfish, careless and indifferent father. Hawking and spitting about the house, over carpets, floors, walls and bedding, the prattling child about the premises on all fours is in constant danger of infection and reinfection, and if this danger to the future health of his offspring is

pointed out, if admonished by the doctor, the father will in most instances not heed it because it does not suit his comfort and convenience.

A child born of a tuberculous mother should not be put to the breast; if she is nursing her child, it must be weaned at once. Tuberculous parents, both father and mother, should not kiss their children nor should they be permitted to kiss other children. The tuberculous should be isolated if possible; each should occupy a room and bed singly. All the furnishings should be very plain, the floors not carpeted; especially should the room be well aired, well ventilated, facing toward the South for sunshine and light. The patient must not have free access to all parts of the house, but be confined to this one room. If such rules are very strictly and carefully observed, the infant can be in a measure protected from a possible infection. A still better plan, if the financial condition permits, is the removal of the infecting individual to a nearby, well-equipped sanitarium. As tuberculosis is primarily an infectious and not a contagious disease, every avenue of infection should be carefully safeguarded in order to avoid infantile dissemination, always bearing in mind that, do what we may, under the most hygienic and the best sanitary conditions in a tuberculous family, we cannot always inhibit at least a mild infection.

Almost every case of infantile tuberculosis is directly traceable to an adult who is or was tuberculous, and conversely every case of adult tuberculosis is again directly traceable to an infection in early infancy, and in a great many instances we have no difficulty in tracing the infection and to follow it throughout the many years of latency, that is, from early infancy up to mature old age. An old man or woman afflicted with a persistent cough lasting for years, especially troublesome during the winter months, usually spoken of by the other members of the household as a hard cold or a winter cough, a bronchitic or asthmatic cough, is very frequently found on closer examination to be a case of slow, chronic, fibroid pulmonary tuberculosis, and from a person so affected the infants and small children about the house are generally infected. A few illustrations will make this point clear.

CASE A.—A. V., aged 23 years, American born; proved on examination to be active moderately advanced tuberculous. Family history gave that the father died from some lung disease about 17 years ago, when this patient was just 6 years of age. On the left side of the neck near the angle of the jaw is a prominent scar typical of a post tuberculous adenitis, the ineffaceable impress of a once suppurating and discharging gland. This occurred when he was three years of age. Since childhood he had always enjoyed very good health until last June when he noticed that he began to tire easily, since which time he has developed a very progressive pulmonary lesion. Undoubtedly, the source of infection was from the father years ago, and before this patient was three years old.

CASE B.—W. G., aged 52 years; usual weight 281 pounds, present weight 263%. American born; occupation, mailer. He has always enjoyed very good health. No cough, no pneumonia, no pleurisy, no typhoid. In May last suddenly and without any premonitory signs a pulmonary hemorrhage developed lasting, with varying intensity, about three days. Physical examination after the hemorrhage had subsided gave unmistakable signs of right apex involvement. Bacilli in sputum. Family history: Mother died of paralysis, one brother died of tuberculosis 12 years ago, one sister living and well, father died at the age of 50, when patient was a lad not quite 12 years old, supposedly from asthma. As we know

that asthma *per se* will not cause death we can only infer that the father was chronic tuberculous and infected him in early life.

CASE C.—J. M. American born, aged 42 years; occupation police officer; usual weight 215, present weight 180; was always in good health, moderate smoker and drinker; an attack of rheumatism lasting about a month at the age of 12. For the last two winters was troubled more or less with a cough from which he was entirely free during the summer and fall months. Was repeatedly examined by different physicians but owing to his good physique, absence of fever and good appetite was informed that he was suffering simply from an attack of bronchitis. In February last, suddenly while seated in his home he had a hemorrhage, not very profuse at first, but the following day he had a most severe bleeding spell lasting with more or less severity for four days. A careful chest examination after the subsidence of the hemorrhage showed a right sided pulmonary lesion, in second interspace, para-sternal line, with distinctly audible râles. Sputum revealed bacilli. I elicited the following family history. Mother well along in years but hale and hearty. Father died at the age of 39 from pulmonary tuberculosis when the patient was a lad but 5 years of age. As the mother informs me that the patient's father and he were, during the last years of the father's life, inseparable, we must conclude that he was infected by his father before the age of 5, or more than 37 years ago. Innumerable such histories could be mentioned but these will suffice.

As tuberculosis, as seen in infants and young children, is usually a chronic lymphadenitis and lymphangitis tuberculosa, a secondary tuberculous manifestation, treatment, if very early instituted, will give in the majority of cases an immunity sufficient to protect the youth or young adult from all future tertiary complications. For the successful treatment of secondary or glandular tuberculosis, as it is usually found in infants and young children, three good methods are now advocated, and only a combination of all three, from personal observation and experience, will, as a rule, lead to a successful termination.

First, Diet and Hygiene. This is of paramount importance. No special food is necessary; any good wholesome diet, mixed preferred, is suitable. Eggs, milk, meat, vegetables, fruit, bread and butter should be the principle foodstuffs. Do not stuff your patients; do not give raw eggs in excessive amounts; do not insist on your patient taking large doses of fats and oils, and above all do not prescribe for your little patients nauseating, sickening and loathsome cod-liver oil, which by Nature was never intended for the human stomach. A good quality of olive oil may be suggested to be given in from one-half to one teaspoonful doses; this will not cause gaseous eructations and is well borne by the child's stomach. Give all foods with regularity, allowing the stomach a certain amount of rest between meals. This is best accomplished by insisting on the patient's abstaining from all food and drink between meals; at bedtime, if desired, a cup of milk with crackers may be allowed.

As to hygiene, good wholesome air, outdoor exercise, plenty of sunshine, sufficient rest, well-ventilated sleeping apartments and frequent baths, either warm or cold, as the individual child may prefer.

Second, Medication. Much medicine is not indicated in the treatment of infantile or glandular tuberculosis, still very good results, mainly as accessory means, may be secured by its use in the general fight against this disease. For many years, as a tonic or impressive remedy, I have

used and recommended the old and time-honored syrup of iodid of iron, the syrup of the ferrus iodid of the U. S. P., and I have accorded to it the first place among the vast array of recommended medicaments. I prescribe equal parts of the syrup of iodid of iron and glycerin, and direct that the child be given of this mixture a half teaspoonful with each meal, or three times a day. This gives about 15 minims of syrup of ferrus iodid to a dose. If desired, a minute quantity of arsenic in the form of the liquor arsenici chloridi, U. S. P., may be added, say a drop or two to each dose. This medication should be occasionally varied by some other palatable iron preparation. The liquor ferri albuminatae of the National Formulary makes a very desirable one; a few drops of an arsenical solution may also be added to this if desired.

Third, Specific Tuberculin Treatment. Whatever our views about the use of tuberculin may be; whether it favors mainly the production of antibodies in the tuberculous organism, or if its use is productive chiefly of fibroid tissue changes about the tuberculous foci or gland, in time forming a barrier to the future egress of the bacilli, encapsulating the gland with a strong impermeable layer, inhibiting any further exacerbation of any tuberculous lesion—whatever may be our opinion, it stands out bold and clear that tuberculin as it is applied to-day in the treatment of this disease, is undoubtedly without a parallel. To my mind the chief value of tuberculin in the treatment of infantile glandular or secondary tuberculosis is principally dependent on the fact of its bringing about fibroid connective-tissue changes around a tuberculous gland, the production of immune bodies being of secondary or minor importance. Having satisfied yourself that the case is one of glandular tuberculosis, begin the subdermal use of tuberculin in very minute quantities, about 1/20 to 1/10 of a millimilligram, equal to about 1/600,000 to 1/1,200,000 of a grain, repeating it about once, or at the beginning, twice each week, and with each succeeding dose gradually increase the amount of tuberculin. It will not be necessary to progressively increase the dose until very large doses are given. Usually when about fifteen or twenty subcutaneous injections have been given and the patient is doing well, I do not increase the dose, but remain at that dosage for some length of time, denoting this as the "tonic dose."

In small children of a very sensitive or nervous nature, the use of the hypodermic needle is very much dreaded, and the use of tuberculin by this method in these cases is not always applicable nor satisfactory. In such cases I institute the tuberculin medication by means of a dermatic way, using a millimilligram solution, directing the attendant or nurse to rub into the skin of the child in the axillary space, usually at bedtime, a few drops of this solution, and continue rubbing until all has been absorbed. Recently I have found a more desirable and a more efficacious remedy in the use of an ointment prepared from tuberculin and lanolin. I direct that an ointment be prepared to represent in tuberculin value an amount equal to the tuberculin in the dilutions which I am using, so that 1 gram contains or represents 1 millimilligram. By means of this oint-

ment, rubbing a small quantity well into the axillary space, quicker results can be secured. Lanolin possessing great penetrating powers, if well applied, is readily absorbed, carrying into the tissue any medicament that may be incorporated.

From my viewpoint, the use of tuberculin as a therapeutic agent in the treatment of some forms of the more active stages of glandular or secondary tuberculosis in children, as well as in adults suffering from this glandular form, is one of the most wonderful achievements in modern medicine: it is nigh unto a specific. When by its proper and faithful use you see suppurating glands, glands which are just at the point of breaking down, glands swollen, painful and tender, discharging sinuses, from the very beginning of the tuberculin medication to undergo favorable retrograde changes, the discharge from the sinuses gradually lessening, and finally entirely ceasing, leaving a healed-over typical scar, or tender, painful, inflamed and angry-looking glands just about to break down, in a very short time, change for the better, and if, after maintaining the tuberculin impression for several months, where some time ago a tender enlarged gland was observed, we can now palpate a small, hard, firm and well-healed body; suppurating glands healed and only healthy scar tissue now left to remind you of the former condition, your faith in the use of tuberculin will be well sustained.

When a positive diagnosis of infantile glandular or secondary tuberculous infection has been made, the treatment should begin at once with energy, vigor and perseverance until we are assured that the disease is positively arrested and the patient cured. We must make relentless warfare on this tuberculous infection in early child life, when recognized, immediately on its inception, because at this period we may anticipate a much more favorable prognosis. Owing to the extreme chronicity of this disease, we are so frequently given to indifference and seldom apply ourselves assiduously to the treatment of the secondary stage of this tuberculous infection, until, in adult life, tertiary symptoms present themselves mainly in the form of pulmonary phthisis. We then are suddenly awakened to a painful and helpless realization of our having procrastinated, that the time for the arrest and cure in the majority of cases has perhaps many years passed by; that now so much irreparable damage has been done to the susceptible organism that it is far beyond all hope of arrest. What medical practitioner would think of waiting to treat a case of syphilis until tertiary lesions are manifest? That is just what we are doing every day with the tuberculous infections in young life.

The dictum of v. Behring, that tuberculosis in adult life is only the echo of the song which was first sang at the cradle, or in plain English, that phthisis in the adult is only the tertiary form of the secondary tuberculous infection which was manifest in early child life, will always be true unless we can stamp out the early glandular infantile tuberculosis; this alone will give positive immunity against adult phthisis. Let us be true to our calling as physicians, true to our obligations to the public, to our clientele, to our families and to all who seek our advice

in matters relating to their health and their welfare; impress on the parents, the guardians, the teachers and others the paramount importance of early recognition and continuous, uninterrupted treatment in all children afflicted with this insidious plague. Only by eradicating the disease in the very young, long before the school days have begun, can we hope to avoid all tertiary tuberculous phthisis in adult life.

BRONCHIAL ASTHMA DUE TO HYPERSUSCEPTIBILITY TO HENS' EGGS *

(From the Memorial Institute for Infectious Diseases, Chicago.)

K. K. KOESSLER, M.D.

Assistant Professor of Medicine in Rush Medical College

CHICAGO

It is the purport of this communication, first, to report on three cases of bronchial asthma due to hypersusceptibility to a certain food (hen's eggs); second, to demonstrate the similarity in the symptomatology of bronchial asthma with experimental anaphylaxis; third, to point out the importance of the allergic factor in the etiology of bronchial asthma.¹

CASE 1.—R. G., boy, 13 months old; weight 23 pounds, 3 ounces; first child, normal birth. When first seen in March, 1909, the child was found in a state of severe dyspnea. Respiration, 48. Pulse uncountable and very soft. The face flushed and fretful. The nostrils were in constant vibration and all the auxiliary muscles of respiration were actively involved. The pupils were very much narrowed, and the whole head and back of the child covered with perspiration. The thorax was of emphysematous configuration, the lower aperture markedly distended. The whistling and stridulous breathing was audible all over the child's room. Palpation revealed the whole chest in strong vibration and auscultation, sonorous and distant râles all over the chest. The heart sounds seemingly pure in character. The mother reports that the child had a similar attack about three weeks ago. Two pediatricians who saw the boy at that time pronounced the case as bronchial asthma and advised a change of climate.

On closer examination regarding the diet of the child, it was learned that previous to the second attack the child had received for the first time some soft boiled egg and that the attack set in about one quarter of an hour afterwards with vomiting and diarrhea. It was further learned that previously to the first attack, some cake (cookie) had been given to the child.

No signs of enlarged bronchial glands were found. No asthma, hay fever, tuberculosis, diabetes or gout in the family. Pirquet negative.

Blood examination during attack on March 3: Leukocytes, 9,200; erythrocytes, 5,120,000; hemoglobin, 92 per cent. (Fleischl-Meisner); color index 0.9.

Differential count, March 12: Leishman stain; 300 cells counted. Lymphocytes, 56.2; large mononuclears, 1.6; polymorphonuclear neutrophils, 37.4; polymorphonuclear eosinophils, 3.4; mast cells, 1.4.

* Read at the Sixty-Second Annual Meeting of the Illinois Medical Society, at Springfield, May 21-23, 1912.

1. It must be stated here that a similar view regarding bronchial asthma was expressed by Dr. S. J. Meltzer of New York at the meeting of the Association of American Physicians, Washington, D. C., May 4, 1910. I held, however, the view independently of Dr. Meltzer after the observation of my first case in 1909, and expressed it repeatedly in discussions with Dr. Hektoen.

Differential count, March 21, Leishman stain, 300 cells counted. Lymphocytes, 55.4; large mononuclears, 2.2; polymorphonuclear neutrophils, 31.2; polymorphonuclear eosinophils, 9.1; mast cells, 3.1.

The urine was examined on the day following the second attack. Reaction acid, specific gravity, 1.016; no albumin, sugar or acetone was present.

Since it appeared obvious that the feeding of the egg might be incriminated as the causal factor of the attack, the following crucial experiment was carried out on April 14, with the full understanding and consent of the parents, who were eager that a definite diagnosis should be reached. One teaspoonful of fresh egg-white was added to one quart of milk well shaken, and 4 ounces of this mixture were fed to the child. Almost immediately after this egg and milk mixture was taken (accurately forty seconds) the child began to feel uneasy and cried. It began to choke and rapid breathing set in, the dyspnea soon reaching an alarming severity, the child wanted to be taken up and carried around, sitting constantly in an upright position. Whistling râles could be heard over both lungs, the stridor being audible at a considerable distance. About three-quarters of an hour after the egg was given there appeared an urticarial-like eruption all over the body, especially marked on the arms and thorax. This attack was treated in the same way as the previous one. One cubic centimeter of adrenalin, 1:10,000 was given subcutaneously and 1 gram of chloral hydrate in enema. Following the medication, the dyspnea lessened, but it took about five days until the child appeared again perfectly normal.

I considered the case as one of egg asthma; that is to say, as bronchial asthma induced through an allergic reactivity on the part of the child toward hens' eggs (alimentary anaphylaxis). The child, who had been weaned at 4 months of age, was put on an exclusive milk and carbohydrate diet, and all other proteins were carefully avoided. Phosphorus-cod-liver oil mixture and calcium lactate were given for a considerable period, since the child showed some of the stigmata of rickets. Eight weeks later, in June, 1909, I tried to overcome the hypersusceptibility in the following way: One drop of fresh egg-white as small as feasible was stirred up and shaken with two liters of water. From the albumin water, one drop was added three times daily to the food, preceded one-half hour by a capsule containing 0.3 grams of pancreatin and pepsin each. In the first days following this treatment the child showed some dyspnea, but this was much lighter in character and short in duration; also no urticaria appeared. This medication was therefore continued, the amount of the albumin water being increased weekly, until 15 drops of it were added three times daily to the food. The child left Chicago for the Upper Peninsula and was reported in the best of health during the summer months.

CASE 2.—A. M., girl, 9 years of age, seen first March 2, 1911. The present trouble began about the middle of February, 1911. The child became, while at the dinner table, suddenly pale and frightened, and complained about violent pain in the stomach, cramp-like in character. Vomiting and profuse diarrhea followed soon and about one-half hour after the onset of the attack there appeared an urticaria-like eruption all over the body. Towards evening of the same day all these symptoms had subsided and two days later the child felt again com-

pletely well and ate with appetite. But twelve days later the same type of attack occurred and since the child had had some omicette this evening the mother thought that a "spoiled" egg may have caused the illness and took especial care to obtain completely fresh eggs. The mother avoided also for some time the giving of any food containing eggs to the child. On March 2, 1911, the child asked for a piece of cake (angel-food) which was on the table and received it. Almost instantaneously the girl suffered from severe pain in her stomach and vomited a considerable amount of the meal just taken, and with it some pieces of the cake. The pain increased all over the abdomen and profuse diarrhea followed. The child felt cold all over and gasped for breath. About one hour after the onset there appeared on the extremities, on the thorax and slightly also over the face, some red patches which itched considerably. In this stage I had occasion to see the child. It was a somewhat over-developed child for its age of pasty-obese type. The skin showed solitary papules which had been scratched. There was marked cyanosis of the face, the pupils were of normal size and reacted well. Perspiration of the head and back, the respiration very labored and fast (44 per minute). The wheezing and whistling could be heard at a distance. No glands were palpable, nor demonstrable on percussion, the thorax in the inspiratory position and of a barrel-like appearance, the lungs distended and absolute heart dullness could not be outlined. Dry wheezing and sibilant râles over both lungs on auscultation. The pulse 124, the temperature 97.8. A very small sample of the sputum obtained on this day showed a considerable number of eosinophilic cells and ciliated epithelial cells, but no Charcot-Leyden crystals and no Curschmann's spirals. Blood-smears taken on this day showed on later examination: Polymorphonuclear neutrophils, 62 per cent.; lymphocytes, 32.2 per cent.; large mononuclears, 4.1 per cent.; polymorphonuclear eosinophils, 1.5 per cent.

The urine was acid, specific gravity, 1.019, a trace of serum albumin was present. No sugar but acetone and diacetic acid were both present in considerable amount. This was found on repeated examination. Functional test of the stomach on March 10, showed total acidity of 52; free hydrochloric 18, and no lactic acid.

The mother is subject to migraine; mother's father died of diabetes mellitus; father healthy but very neurotic temperament. The girl was nursed by the mother for six months; in the first two years of life she suffered from a weeping eczema which did not respond well to treatment. The child took eggs since its second year but though she had at first no distaste for them, she acquired a certain dislike because she suffered from nausea whenever she ate them. From time to time the child had urticaria and as the mother emphasizes, showed a puffed eyelid on the right side (angioneurotic edema). She had been subject to chronic constipation since infancy. Had whooping cough at 4 years, measles at 6 years; enuresis nocturna until two years previous.

I gave the child a hypodermic injection of 0.25 c.c. of adrenalin 1:1,000 in one c.c. of salt solution and an enema containing 1.5 gram chloral hydrate, and the following day the child felt well again, but somewhat weak. The clinical picture of the child when seen during the attack was that of a typical case of bronchial asthma. The allergy to the egg was definitely established by placing a drop of egg-white on the skin of the child, and scarifying it with a Pirquet needle. Twelve minutes later there appeared a red patch on the place of inoculation on the forearm followed by the formation of a blister—allergic skin reaction.

CASE 3.—Mrs. A. W. H. The patient is a woman, aged 28 years, mother healthy, father subject to hay-fever. The father had, as a child, an intolerance for eggs. Whenever he ate them, he suffered from cramps, diarrhea and vomiting but no asthma. At present he eats them freely and with no ill-effects, except for a slightly laxative reaction. The patient was nursed as a child by her mother for

nearly one year and was a healthy well-developed child, according to the testimony of the mother. The child had eaten egg without ill-effects until about two years of age. In the second year, after eating some soft-boiled eggs she became nauseated and covered with "hives." Since this time she could not eat eggs without feeling very sick. The patient says that she has not eaten eggs since she can remember. Her own recollection of the condition is of being sick after eating cake, ices and certain candies. She learned thus from experience not to eat anything supposed to contain eggs. Grown people considering this a childish fad often deceived her, and thus, in the patient's own words, she lost her faith in the truthfulness of the grown-ups. She has had very few attacks in the last few years; the last occurred in the summer of 1911, after eating some ice cream supposed to contain no eggs. She felt almost immediately itching and irritation of the mouth, lips and throat and felt little lumps appearing within the oral pharynx. This was soon followed by violent abdominal cramps and in the hope of ridding herself of the poisoning, she induced vomiting. But, as she puts it, "perhaps some of the vomited matter reached the nasal passages for they closed soon tightly, giving a sensation of intense pressure in the nose and head." This was followed by a great difficulty in breathing for though she was able to inhale the air she was unable to expel it. She felt as though suffocating and for several hours there was a continual flow of mucus from the mouth and throat. The abdominal cramps continued and were followed by severe diarrhea. The whole condition lasted about three hours. There were no bad effects the next day but she felt exceedingly tired and drowsy. The patient states that the yolk of the egg affects her in the same way as the egg-white. She has another allergy to food, namely, asparagus, which causes acute coryza, followed by typical attacks of bronchial asthma. This latter allergy exists since about ten years. It may be mentioned that the little daughter of the patient, 5 years old, eats eggs without ill effects.

We have then, here, three individuals in whom sudden attacks of expiratory dyspnea accompanied by vaso-secretory disturbances of the mucous membranes of the aerial passages, in short, the symptom-complex, which we call bronchial asthma, can be definitely traced to a common food, namely, hen's eggs. Yet deterioration of the food did not bring about the toxic effect in the individual, but this toxic effect depended undoubtedly on the individuals themselves.²

The proof that the egg-proteins are really the causative factor in these cases of bronchial asthma lies not only in the clinical evidence, but in the animal experiments. If we inject an animal, for instance, a guinea-pig with a minute quantity of egg-white and repeat this injection with egg-white in twelve to eighteen days, then the animal shows the following symptoms: A few minutes after the second injection it begins to scratch the nose and body, becomes restless and chokes. Respiration is labored and there is retching and discharge of urine and feces. Convulsions may set in, followed often by respiratory arrest and death. The most striking phenomenon is the acute emphysema, the permanent distention of the lungs after death, due to a bronchial stenosis of peripheral origin, caused by a folding of the bronchial mucosa, through the contraction of the smooth muscle in the bronchi.

Beside the expiratory dyspnea there is a sudden fall of blood-pressure and of temperature, leukopenia, a lowered coagulability of the blood and

2. Similar cases have been previously described in the medical literature. A full survey of all cases on record will be given in an article on "Allergy to Eggs," which will appear in the *Journal A. M. A.*

a marked decrease in the complement content. On subcutaneous injection, there are edemas followed often by necrosis. This is not a new experiment to demonstrate the production of egg asthma in the animal, but the fundamental experiment of anaphylaxis. The symptomatology is the same, however, as in our three cases of egg-asthma, and yet there are apparently two differences. We define allergy or anaphylaxis as a disorder in the normal protein metabolism due to the parenteral introduction of foreign protein. Parenteral means with avoidance of the intestinal route. The intake of the egg, however, was in our cases, enteral. This difference is only an apparent one, for traces of the heterogeneous protein may pass directly through the stomach wall into the blood. The second difference in our cases is the fact that the first sensitizing dose seems not to have been given. There is a great probability in all of our cases that one or several previous intakes of egg albumin occurred in the form of cakes, which may have sensitized our patients. But this is not essential. For the substances which split the protein in the blood to toxic products may be present from birth in an abnormally high amount, through a peculiar diathesis of the individual. This individual disposition, or in Greek diathesis, called by German authors "krankheitsbereitschaft," which means preparedness for disease, constitutes in itself the sensitized state (diathetic anaphylaxis). In this way we may indeed, with v. Strümpell, speak rather of various asthmatics than of various asthmas. The similarity, or shall we say identity, between anaphylaxis and asthma shows itself further in the following points: Anaphylaxis is a condition which may be inherited, so is asthma. Anaphylaxis is specific; animals sensitized to one form of protein will react only to this protein; the same is true in all cases of egg-asthma. Other proteins, as meat, may be ingested without the slightest discomfort, and a careful examination shows there are no demonstrable disturbances in the general metabolism of protein matter. The port of entry of the incriminated factor is only rarely the stomach, as in our cases (though it seems we have to revise the whole question of the asthma dyspepticum, according to the view outlined). As a rule, it is the nasal and respiratory tract through which the astmatogenous substances, dust, powders or odors take possession of the bronchial mucosa. It has been shown by Weichardt and by Busson that anaphylaxis may in fact be produced by sensitization through the aerial route. For hay-asthma these facts have been now long experimentally established. In this light even the most paradoxical cases of nervous asthma meet with a better understanding. When Austin Flint tells us of a child who had attacks of asthma whenever it slept on a feather bed, and which he cured by making it sleep on a couch stuffed with horse-hair, then we now know that this child was sensitized to the keratin-proteids of the feather. If a famous American general (General Roberdeau) had an excessive antipathy toward cats, in that he ascribed to their emanations his attacks of asthma, we must not accuse the general as suffering from hysteric asthma, but remember that H. Gideon Wells has shown that one-twenty-millionth of a gram of protein is sufficient to produce a distinctly sensitizing effect in animals, and that the sensation which we call odor is in the last instance, absorption of such minute particles of matter.

Those cases of asthma which begin with a cold, with an infection of the nasopharynx and in which the bronchitic factor is markedly pronounced from the beginning, will have to be regarded as cases of sensitization to the toxoproteids of microorganisms. In these cases active immunization with bacterial vaccines has given me excellent results in two cases due to the influenza bacillus and in three caused by the pneumococcus. Thus the identification of asthma as a manifestation of an inherited or acquired allergy or anaphylaxis is able to unite and explain in a satisfactory manner the heterogeneous theories of the underlying mechanism of the asthmatic crisis.

SUMMARY

1. There exists a form of bronchial asthma which is undoubtedly due to a diathetic allergy or anaphylaxis toward hen's egg.
2. In most cases of bronchial asthma the causative factor lies in an allergic reactivity of the individual.
3. The multiplicity of asthmatogenous substances is explained by the multiplicity of proteins, which may be split into anaphylatoxins.

MUSCLE DEGENERATION AND OSTEOMA *

LAWRENCE RYAN, M.D.

CHICAGO

The title of this paper relates to such an extensive topic that I shall not attempt to take it up in its entirety. I shall confine the paper to the changes that occur in myositis ossificans traumatica.

Some thirty years ago Volkmann, of Halle, described the occurrence of osteomas arising from the periosteum. He attributed these growths to irritation or inflammation. This he first noticed in the tissues of the floor of old leg ulcers. Some of these became extensive in area, in fact, the longer the duration of ulceration, the larger the osteoma. Later, he, Poncet and Tillmanns, of Cologne, described tumors of bone occurring in muscle. These tumors were regarded as the result, in some cases, of a single trauma, often slight, in others of severe and in still others of often repeated trauma. They were observed most frequently in traumas resulting from a dislocation of a joint or the kick of a horse or the blow from the butt of a musket. Usually they were observed in the vicinity of a joint. These bony growths were observed most frequently in the brachialis, anticus and the quadriceps extensor; they also occurred less often in the adductors, gracilis, deltoid, glutei, coraco-brachialis, masseter, triceps, subclavius and others. These growths have occurred with such regularity in certain muscles that they have commonly been known as exercise bones. That occurring in the brachialis anticus has been

* Read at the Sixty-Second Annual Meeting of the Illinois State Medical Society, at Springfield, May 21-23, 1912.

called the turner's bone. The old wood-cut of the ossification of this muscle copied from the work of Volkmann and later by Tillmanns was and is, still, copied as an example of the classical type of this affection.

It was thought at one time, before the advent of the Roentgen rays, to be a very rare affection. Since the more general use of the *x*-rays, cases have been reported frequently. It has been found that these osseous growths occur in several regions and in a dozen or more muscles. One observer, Schultz, a German Army surgeon, has collected and reported 295 cases. These cases were treated in the German military hospitals in the decade including and preceding 1907. Werner reported 101 cases that had been treated in the surgical clinic at Munich. He collected more than twice that number from the literature. It is safe to say, after a diligent search of all the available literature, both domestic and foreign, that there are upwards of 500 cases reported of myositis ossificans traumatica.

The first clinical signs or symptoms are those of trauma. The part affected is discolored and swollen. The swelling is quite marked and persistent. Pain and tenderness are constant in the early stages. Temperature is neither high nor constant, if at all present. Restriction of function is a prominent feature. As time goes on this usually becomes more marked. Of course, all degrees of trauma and the reaction to the same may and do have different results. In some cases the affected area results in restricted motion, if in a muscle, and to more or less complete ankylosis in case a joint is involved. Many cases have been treated as sprains, contusions, dislocations and fractures of the various processes of the bone, in the joint involved. The persistent stony hardness being taken for callous; the result of fracture. Not a few patients consulted a surgeon only on account of the persistent or increasing disability.

The etiologic factors in the cause of ossification of tissue in the one case, and the complete absorption of the results of trauma in the other and by far the more numerous instances, are not known. Many theories have been advanced; many deductions have been drawn from cases accurately and repeatedly observed. Still no positive proof nor generally accepted view has as yet been advanced. Probably one reason for this is the different stages at which the cases have been operated on, and the specimens examined. Undoubtedly bone is produced from the bone and periosteal fixed tissue cells. The tendon, connective tissue and perimysium participate at times.

Frank reported a case operated on where he found two osseous portions. One entirely in muscle; the other deeper and attached to the periosteum. By far the greater number of observers believe that the osseous changes are due to an inflammatory process of hematogenous origin. Berndt believes that the ordinary pus organisms cause the inflammation. He believes also, that if no infection occurs, no bone is formed and *vice versa*. He believes that all forms of myositis ossificans as acute, chronic and progressive, so-called, are all different phases of

the same inflammation and are all caused by the same bacteria under different conditions and in different locations.

Busse and Blecker in support of the inflammatory theory state that most of the tumors begin in muscle and contain connective tissue, cartilage, osteoid cells and mature bone cells mixed indiscriminately. They claim that the mass composed of these cells may be absorbed, partly or wholly. On the other hand, such men as Mays, Kimmel, Pinter, Helfereich, Lehmann, Munro, Pincus, Bartsch, Cohn and others, still believe that it is a true osteoma.

Nicoladoni believes that the condition is due to trophoneurotic changes. He believes that the condition is analogous to progressive muscular atrophy and to pseudohypertrophy, etc. The electrical reactions, however, indicate the absence of the neurotrophic factor. With the exception of two cases of cerebral palsy, and one where an osteoma occurred in a laparotomy scar, all the cases reported were in young children, adolescent or young, healthy adults. No mention of neurotic symptoms has appeared. This speaks more positively against, than for, a trophoneurosis as generally understood.

A few observers, among them Tillmanns of Cologne, believe that the synovial fluid liberated from the joint by the injury, may have some unusual action on the injured tissues. This view seems untenable. We know that thousands of cases have a joint opened by accident or intent and no osteoma develops. The reason for this view seems to have arisen from finding a gelatinous synovial appearing fluid in the bony cystic formations that have been found in a few cases. We also know that in bone healing in an open wound we have this same gelatinous fluid even when in the middle of a long bone and not connected with a joint.

Others have advanced the usual explanation that this is another instance of misplaced periosteal, chondral or osseous buds. Atavism has also been suggested in explanation. The claims that the analogy between the osseous formations that occur along the sides of bone in the limbs of the lower animals, and myositis ossificans, do not seem to be fully substantiated. These growths known as splints, etc., are primarily bony growths; they arise from bone or periosteum. They usually occur on the feet or legs of the animal and appear to have a function. This seems to be to reinforce a weakened part where there is an extra strain. In man these growths rarely occur in the feet or the hands.

Wolter has described the occurrence of lymph cysts in connection with myositis ossificans. These probably are only accidental. In severe injury where the structures along the anterior surface of a limb are traumatized the lymph system must also be more or less injured. The cysts are probably due to the injury and the interference with the return lymphatic system.

The pathology as described by Virchow was believed to be peculiar to this affection. He believed that it was due to a peculiar diathesis — "Diathesis ossificans sive ossea," he designated it. He considered the growth as being on the border line between a new growth, osteoma, and

an inflammatory process, the result of muscle degeneration. He was more inclined to the latter view. He believed that these changes occurred in and were derived from the muscle cells, and not from periosteum nor from bone, nor connective tissue.

The only settled change of opinion is in the view that the periosteum and connective tissue produce bone and that the participation of muscle tissue is an accidental occurrence. The belief in this view is practically unanimous. Otherwise we have the tissue changes found in trauma, callous formation and repair in ordinary bone healing after fracture.

Prognosis depends wholly on the reaction of the part to the injury. The occurrence of a large hematoma is thought by some observers to have a direct bearing on the presence and the extent of the osseous formation. One of the largest bony deposits reported was in the case of a hemophilic. The effusion of blood was large and the brachialis anticus was so completely ossified that it ankylosed the elbow joint. Almost all marked cases either have some degree of ankylosis of the joint or restricted muscle action. This causes the case to seek the surgeon. One surgeon collected a series of 100 cases operated on with restored function and no recurrences.

The diagnosis is made on the history of trauma. The early or the late signs of trauma are present. The persistence of the stony hard swelling, the tenderness and the limitation of motion after the time usually required for an ordinary trauma to subside should give rise to the suspicion of myositis ossificans. The x-rays taken in at least two planes reveal a shadow due to the presence of bone in one of them. This evidence has been found as early as the eleventh day, and is usually present four weeks after the injury. A few cases never produced a shadow and yet bone was found at operation. It should be remembered that rheumatoid arthritis and gout also may cast shadows similar to those of myositis ossificans.

Treatment is divided into conservative and radical. Conservative treatment is indicated during the early stage of the affection. The most essential treatment is rest, hot or cold applications and aspiration of the fluids if in excess. Bier's hyperemic treatment, fibrolysin injections and counter irritation may be of benefit. Massage and motion, active and passive, have been given as the causes of the ossification when used in the early stages.

When the x-rays show a bony growth and the process is at a standstill, removal is the best procedure. Recurrences usually mean early and incomplete removal. The removal of muscle surrounding or connective tissue attached to the growth is also advised. In case the tumor is subperiosteal or attached to the periosteum, removal of the periosteum is advised. This is not always necessary, especially where the tumor has ceased growing.

Case 3 of my series was a subperiosteal tumor. The periosteum was split and left attached at the muscle. There has been no recurrence after two years.

CASE REPORTS

CASE 1.—October, 1900. Boy, aged 16 years, fell upon his outstretched hand. Consulted a physician who said that he had a dislocation backward of the elbow joint. Reduced the dislocation.

Case seen for the first time six months later. Could not flex the forearm beyond a right angle. Extension was also much restricted.

A firm hard mass could be felt over the lower and anterior surface of the humerus. Diagnosis of myositis ossificans of the brachialis anticus muscle. No *x-ray* taken at that time and operation was refused.

CASE 2.—May, 1910. Girl aged 10 years. This patient came to the surgical service of Dr. A. D. Bevan at Rush College. He kindly turned the patient over to me for clinical purposes.

Patient gave a history of having fallen on her right forearm one month ago. Consulted a physician. He diagnosed and reduced a posterior elbow dislocation. Patient sought aid for the relief of restricted motion in the elbow joint.

Could not flex the forearm beyond a right angle. A limited hard swelling could be felt on the anterior surface of the elbow joint. *X-rays* showed a beak-like projection over the anterior surface of the coronoid process of the ulna. This extended upward and backward.

Patient was operated on one week later. The shadow showing the spur-like process was found to be the ossified tendon of the brachialis anticus muscle. This was 5 cm. long by 1 cm. wide. Its upper end was intimately adherent to the body of the muscle. An equal amount of the apparently normal muscle was removed with the osseous growth. Normal wound healing. *X-rays* after operation showed spur of bone absent. This patient was very much improved two months after the operation when I last saw her.

CASE 3.—A healthy active man, aged 35 years, had been subjected to prolonged and extreme exposure. Subsequent to this he ran a high temperature and was delirious for some weeks. During this period he had to be restrained on numerous occasions. On recovering two swollen and tender areas similar in appearance appeared. One was just below the left popliteal space, and the other was in front and above the right elbow joint. These were treated for two months or more by rest and hot fomentations. At first they appeared as tender swellings. They persisted and eventually became harder. At the end of four months an *x-ray* showed the growth above the right elbow. The popliteal swelling disappeared. In May, 1910, this case was operated on in the Rush clinic.

The apparently normal brachialis anticus muscle was found covering the large bony hook-like growth. The bony process appeared wholly beneath the periosteum which was readily pushed off. The bony growth was removed with a chisel. It was firmly attached to the shaft of the humerus. It was attached by a mass of apparently compact bone 5 cm. long by 2 cm. wide. It was attached by its tip to the tendon of the brachialis anticus. The tendon was not ossified. There were three quite large foramina in the base of the growth. These even show in the *x-rays*. They transmitted large veins to the interior of the bone. The articulation was opened accidentally during the removal of the bone.

Microscopical section showed only compact bone.

Function was restored almost fully in a short time and has remained.

CASE 4.—September, 1911. At Cook County Hospital. Male, aged 30 years, had received a blow about three weeks before on the front of the lower part of the arm. Complained of tenderness of the part and swelling with inability to flex the forearm. A bony hardness was present over the lower part of the front of the humerus. This seemed quite wide in extent. *X-rays* showed only a faint shadow. Patient was asked to return for *x-ray* examination in a few weeks. He returned but the condition was unchanged, clinically. He promised to return two weeks later but did not.

The clinical findings were that of myositis ossificans. Whether it became more pronounced or cleared up, as some cases do, is only conjectured.

A brief analysis of the two cases operated on reveals the following:

Case 2.—Backward dislocation of the elbow joint with reduction. One month later a well defined shadow with the *x*-rays. This shadow proved to be bone, in the tendon of the brachialis anticus muscle. It was so ossified and attached to the anterior surface of the coronoid process that it had to be chiselled off. The tendon only was ossified. It had every appearance of true bone.

Case 3.—The same condition as in Case 2, except that the bony growth was larger, being 8 cm. long by 2 cm. wide and 2.5 cm. high. This was wholly beneath the periosteum and appeared to be a simple osteoma, both in its macroscopic and microscopic appearance.

Frangenheim believed that in the cases studied by him he could establish a striking analogy between the callous that occurs in bone repair in simple fractures and in which bone, periosteum, connective tissue and perimysium appear to be part and the callous or condition resembling callous that occurs in myositis ossificans traumatica.

It is characteristic of newly formed cells to revert to embryonic types. In the case of myositis ossificans or only in the few instances compared with the whole number injured this is carried too far and another type of the same mesoblastic tissue is produced. This seems a more logical explanation of the changes observed in the limited number of cases that I have seen.

In the last few years since the Roentgen ray has become almost universally used, the demand both of surgeon and patient has been for better approximation. This has led to the open operation and the use of bone plates or the more permanent retention apparatus. This requires an absolutely aseptic technic or the failure to obtain perfect results. If bone or periosteum or muscle are infected even slightly, it will show itself sooner or later. The number of cases of myositis has not increased as one would expect if it were due to an inflammatory process.

It has been proved beyond doubt that muscle cells do not primarily produce the osseous tissue. Therefore myositis is a misnomer. The myositis ossificans in its quiescent state appears anatomically, pathologically and surgically to be a simple osteoma.

LITERATURE

- Groskurth: *Deutsch. Militar. Zeit.*, 1908, No. 18.
 du Pau, C. M.: *Rev. méd. de la Suisse romande*, 1909, No. 1.
 Bocker, Bardenhever, Drehmann, Wullstein and Machol: *Zentralbl. f. Chir.*, No. 29, 1908.
 Steinert: *München. med. Wchnschr.*, 1910, No. 13.
 Pfister, A.: *Arch. f. klin. Chir.*, vol. lxxxix.
 Caminiti: *Policlinico Sez. Chir.*, 1908, xvi, 1.
 Tillmann's *Text-Book of Surgery*, 1899.
 Chiari: *Prag. med. Wchnschr.*, 1892, No. 35.
 Lexer: *Arch. f. klin. Chir.*, 1895, vol. I.
 Lexer-Bevan: *Text-Book of Surgery*.
 Nadler: *Deutsch. Ztschr. f. Chir.*, 1904, vol. lxx.
 Volkmann's *Samml. klin. Vortr.*, 1895.
 Virchow: *Verhandl. d. Berl. Med. Gessellsch.*, 1894.
 Wolter: *Deutsch. Ztschr. f. Chir.*, 1902, vol. lxiv.
 Bloodgood: *Tr. South. Surg. and Gynec. Assn.*, 1909.
 Landow: *Deutsch. med. Wchnschr.*, 1904, vol. xxx.
 Schuler: *Beitr. z. klin. Chir.*, 1902, vol. xxxii.
 Borst: *Die Lehre von den Geschwulsten*, 1902.
 Peters: *Bryant & Buck*, vol. iii.
 Berndt: *Langenbeck's Archiv.*, vol. lxxix, No. 3.
 Calamida: *Arch. di ortopedia*, 1905, No. 3.

- Schulz: Deutsch. Militar. Ztschr., 1910, No. 4.
 Vanderbossche: Arch. gén. de chir., 1910, vi, 2.
 Rubaschew: St. Petersb. med. Wehnschr., 1910, No. 6.
 Horvath: Ztschr. f. orthop. Chir., 1910, vol. xxv.
 Ewald, P.: Zentralbl. f. Chir., 1910, No. 22.
 Strauss, M.: Langenbeck's Arch., lxxviii, No. 1.
 Frangenheim: Langenbeck's Arch., lxxx, No. 2.
 Frank, K.: Langenbeck's Arch., lxxvi, No. 4.
 Busse and Blecker: Deutsch. Ztschr. f. Chir., vol. lxxiii.
 Werner, W.: Inaug. Diss., München., 1904.
 Nove, Jossierand et Horand. Rev. d'orthop., 1905, No. 3.
 Jardy: Rev. d'orthop., 1904, No. 6.
 Bode, Anschütz, Müller, König and Nosske: Zentralbl. f. Chir., 1909, lxxviii, No. 34.
 Aizner: München. med. Wehnschr., 1909, No. 15.

A CASE OF CRANIAL INJURY ASSOCIATED WITH A SPINAL LESION *

ARTHUR B. EUSTACE, M.D., AND RALPH C. HAMILL, M.D.

CHICAGO

The types of cranial trauma that we most commonly meet in the city may be briefly mentioned as concussion, skull fracture and intra-cranial hemorrhage, either of the subdural or extradural type.

I will not attempt to discuss the symptoms of these individual conditions, as they are well known to all present and would involve a considerable amount of time.

The association of a spinal lesion with an injury to the cranial vault is no doubt a somewhat rare condition and is well worthy of discussion at this meeting.

Our idea in the presentation of this case is to call to your attention a symptom complex somewhat out of the ordinary and to furnish subject matter for discussion as to the diagnostic possibilities and the treatment of the condition as a whole.

It had been my privilege to have had an opportunity to observe this patient from time to time for a period of eighteen months previous to his injury and to know others that had been in daily intimate association with him for several years, thus allowing me to have a definite idea as to his character and disposition, which I might state was of a mild and easy-going type.

The case presents a distinct neurologic phase as well as a surgical one and I am led to believe that the services of a neurologist will often be found to be indispensable to the surgeon in certain cases that will present themselves.

CASE 1.—History.—Patient, E. W.: occupation, elevator man; aged 28 years. Previous history negative as to its bearing on current condition. Was injured May 31, 1911. While stooping to lift an object from the floor of the elevator, he was struck by a milk can weighing about eight pounds which had fallen down the shaft from the third floor. He fell forward striking on the right side of his face and immediately became unconscious.

I saw the man within fifteen minutes after the accident and examination showed him to be in a profound coma from which he could not be aroused. His

* Read at the Sixty-Second Annual Meeting of the Illinois State Medical Society, at Springfield, May, 1912.

pupils were slightly dilated and the extremities lax. A small scalp wound was found in the region of the occipital protuberance from which there came considerable hemorrhage. He was taken at once to the Post Graduate Hospital.

The hospital records show the operation as follows: A large semilunar incision was made and a musculocutaneous flap laid back. The periosteum was incised, elevated and retracted. A small linear fracture about one and one-half inches long was evident just below the occipital protuberance. No evidence of depression noted. Suture was then made of the periosteum and occipitofrontalis muscle and a ligation of all bleeding vessels in the scalp. Insertion of small gauze drainage and closure of the wound with continuous interlocking suture.

The patient regained consciousness an hour and a half after returning from the operating-room and did not know where he was or what had happened. His pulse at this time was recorded as 88. Twelve hours later the record shows his pulse to have been 68.

On the following morning the patient developed a flexion and extension paralysis of the right wrist and fingers of the right hand. An anesthesia of the entire palmar surface of the hand and a partial one of the dorsum could be demonstrated.

Four days after the injury I called in consultation Dr. Hamill. I will not attempt to discuss the neurologic findings at all as Dr. Hamill, who will follow me, will present them in detail.

Spinal puncture was made four days after the injury and several drams of fluid removed under tension. A microscopic examination of the centrifuged fluid showed a few unchanged red blood-cells. A skiagraph made on the following day showed a normal condition and contour of the cervical and upper dorsal vertebra. On the seventh day his pulse is recorded as varying from 52 to 56. He left the hospital June 15, 1911, the paralytic condition of his arm very much improved.

Three days after he left the hospital, while lying in bed one night, he had a hemorrhage from the right ear of about 3 drams of bright-red blood. From that time he complained of a constant roaring in the right ear.

Examination showed a rupture of the tympanum and a complete nerve deafness on that side. On the following day the patient began to exhibit distinct signs of mental disturbance and attempted suicide and homicide. He did not recognize his wife or his father, and claimed that he had never seen them before. He did not know his friends or his physician and had no recollection of ever having been injured. His mind was a complete blank, and he talked of strange conditions and people of which his wife knew nothing.

He did not know where he was employed or in what capacity and did not recognize the name of the corporation by which he had been employed for the last ten years. At times he claimed to be wealthy and at other times admitted that he had no substantial means other than a small income which came from an unknown source. He was readmitted to the hospital June 23.

The records state that he was "delirious" and constantly walking around his room like a caged animal, muttering incoherent words. A blood examination showed 4,400,000 red blood-cells, 5,400 white blood-cells and 100 per cent. hemoglobin.

The differential white count showed 34 per cent. small lymphocytes, 28 per cent. large mononuclear and transitional and 43 per cent. polymorphonuclears. Urine, negative.

A spinal puncture was made June 24 and several drams of fluid removed under tension. On the day following this procedure his mental condition showed a marked improvement and at the end of another twenty-four hours he began to talk like himself, recognized his surroundings and his family and friends.

He remembered absolutely nothing that had happened for the past five days and would not believe our story of his actions during that time. He gradually improved and left the hospital June 28, 1911.

I wish to emphasize the great importance of spinal puncture in injuries to the skull. Spinal puncture should always be made not only for its diagnostic aid, but for its therapeutic value. This patient showed a marked improvement following this procedure, especially when a second puncture was made four weeks after his injury when his mentality was in a most dilapidated condition.

I fear that too many of us are apt to use more radical methods in conditions of this type and I believe that while conservatism will in many cases prove disastrous, each individual case should be thoroughly studied before any radical operative methods are used. Spinal puncture should always be made as a preliminary measure, and failing to give a definite therapeutic result, more radical measures may then be adopted.

Dudley P. Allen, in an article published some three years ago, reports twenty-eight cases showing latent manifestations of intra-cranial hemorrhage, traumatic in origin. Spinal puncture was not made in any of these cases.

In summary, the following conclusion can be drawn: We know from observation at operation that a simple linear fracture of the skull with no depression of the outer table did exist. From the subsequent findings, which Dr. Hamill will now discuss, we feel that an associated lesion of the cord was present.

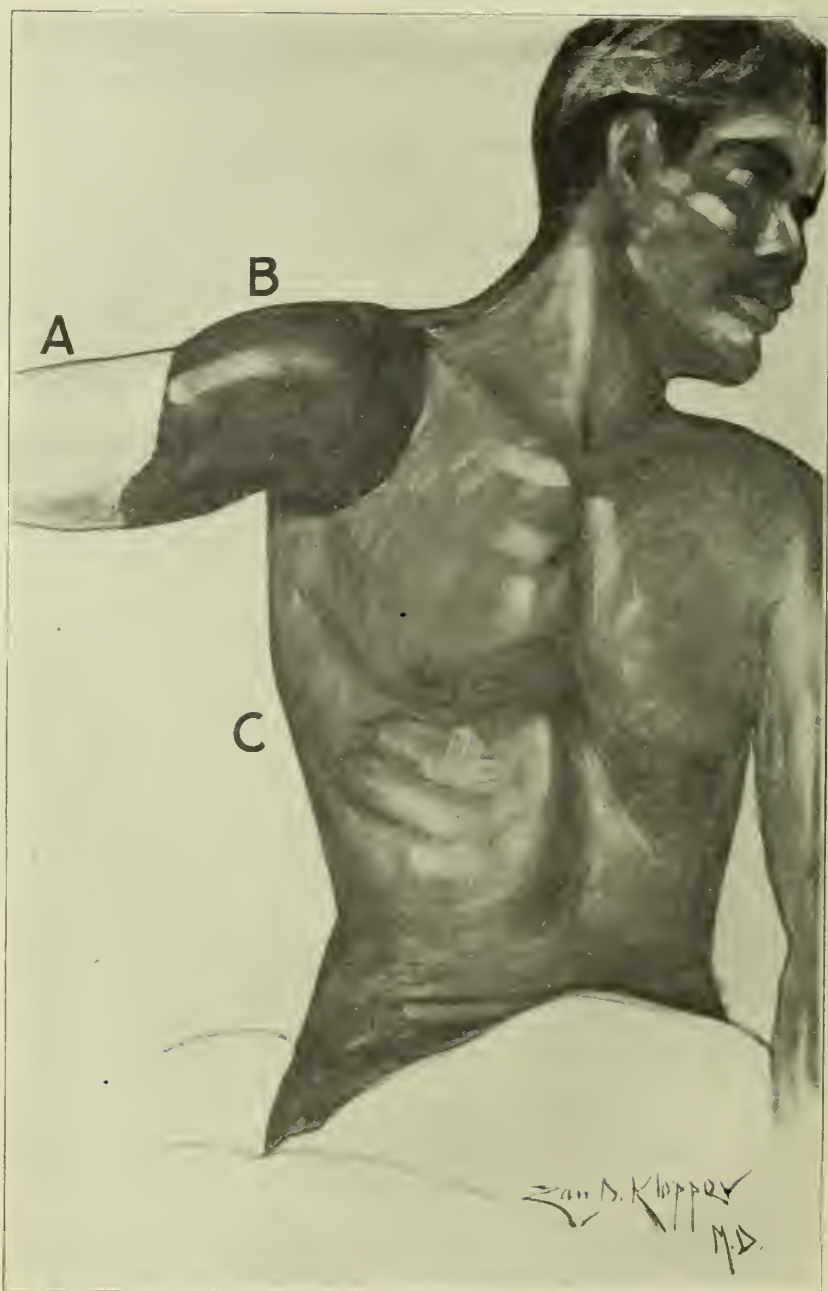
The latent symptoms of mental disturbance which appeared twenty-four days after the infliction of the trauma make us feel justified in diagnosing a small point of hemorrhage within the cranium. Of course, concussion should be considered as a possible etiologic factor, but we are unable to find any records of this condition manifesting itself at so remote a time after the reception of an injury.

The discharge of blood from the right ear, the presence of a ruptured drum and the existence of a complete nerve deafness would seem to point to trauma to the auditory nerve as a result of a fracture through the petrous portion of the temporal bone.

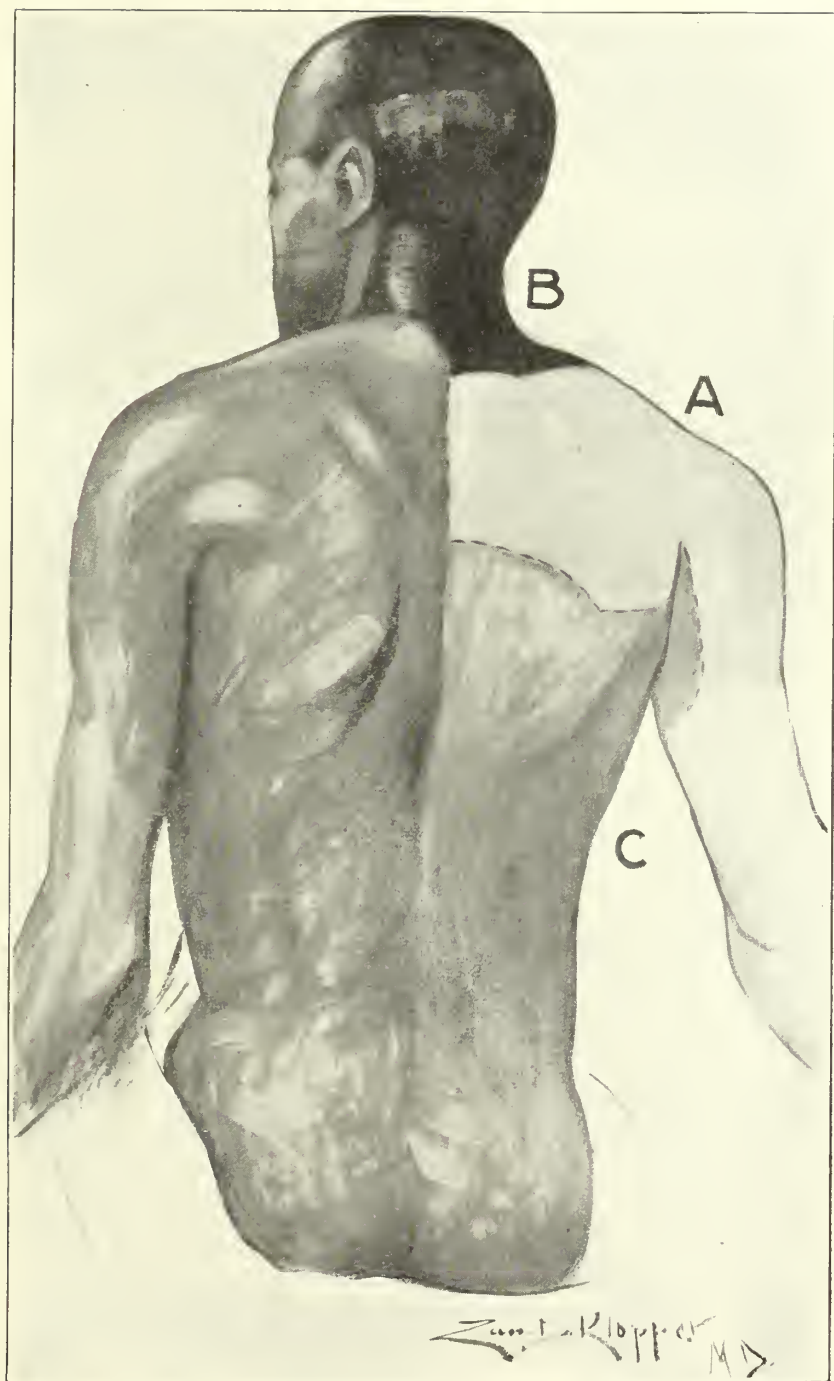
A CASE OF CERVICAL ROOT INJURY

The neurologic side of this case is as follows: A heavy weight falling eighteen feet caused a skull fracture and a sudden sharp hyperflexion of the head. There was coma, more or less deep, for two or three hours, and on waking complaint of pain, numbness and paralysis in the right hand, rapidly if not at once, involving the forearm, arm and shoulder. This without sphincter disturbance or involvement of the legs.

An examination three days later revealed anesthesia to all forms of stimuli of the right arm and the right neck and chest as far down as the D 5; hypesthesia of the same area, with indefinite outlines, on the left side. (See Charts I and II.) There was complete paralysis of the fingers and forearm muscles on the right side. Supinator longus and muscles of the arm and shoulder girdle were weakened. The deep reflexes in the right arm were diminished. Other tendon reflexes, plantar and abdominal reflexes normal. The right pupil was normal and medium sized.



Examination of Sensation June 5, 1911. Area A. Anesthesia to touch, pain, temperature, and joint and tendons sensations. Area B. Hypesthesia.



There was also hypesthesia gradually merging to normal in the same areas on the left side.

Two weeks later the anesthesia was found to involve the anterior surface of the right chest as far down as the nipple.

The left cornea had been destroyed by an old injury. Spinal puncture negative. Mentality a little dull.

Two and one-half weeks later the patient was able to come to the office, which involved walking several blocks. Function had returned to a slight degree in all the hand muscles, considerable power in flexion and extension of the middle, ring, and little fingers, improvement of muscles of the arm, and muscles of the shoulder girdle almost normal. Anesthesia as in the first examination. There was added a rupture of the right ear drum with recent clots in the external meatus, complete deafness of the right ear, slight paresis of the right face, and complaint of pain running down the right side of the neck.

Patient went home from the office examination, acted confused, threatened homicide and suicide, talked at random, and was much disoriented. He was taken to the hospital, a spinal puncture done, and within a few hours returned to normality.

Operation was considered with the hope of finding a clot at the site of fracture seen at the time of injury, but was refused by patient. Six months later, January 30, 1912, the patient still complained of pain in the right side of the neck, had been having headaches, two or three a week, over the right frontal and temporal regions which, when severe, caused nausea and dizziness. He had had occasional attacks of feeling something working up inside, then he would feel light-headed, "things looked dizzy," and after a half hour profuse perspiration. In two of these he said he lost consciousness. During one of these unconscious periods, however, his wife, who is a small woman, lifted him on to his bed, and in the other he confessed to a hazy idea of what was going on around him. In fact, in neither attacks does it seem certain that there was complete loss of consciousness, rather the dreamy clouding of consciousness that occurs in psychasthenic attacks. He was put on moderate doses of sodium bromid without further attacks. There have been no somatic symptoms pointing to an intracranial lesion; fields of vision and reflexes +, no cerebellar symptoms or signs.

However, in view of the signs of basilar skull fracture, i. e., the hemorrhage from and deafness in the right ear, the facial paresis, and the pain in the right side of the neck, the presence of a hemorrhage at the base of the cranial cavity must be taken into account as an etiologic factor in producing these attacks. In the absence of any further localizing symptoms only time or a post-mortem examination can clean up this point.

With regard to the paralysis the first question to settle was whether the lesion was cerebral, spinal, or peripheral; whether the paralysis found at the first examination indicated operative procedure. The presence of the fracture drew the attention to the head. The distinct monoplegia, without involvement of the face or legs, without aphasia, but with marked sensory change at once eliminated a brain lesion as the source of the paralysis.

The third possibility, namely, could the symptoms be due to a lesion of the cervical plexus, can likewise be readily eliminated. However,

drawing attention to the plexus was the distribution of the anesthesia including fairly accurately the areas supplied by the terminal branches of the plexus: the musculocutaneous, radial, ulnar, median and internal cutaneous. The circumflex area was less markedly affected.

Inasmuch as the muscles of the upper arm were less affected than those of the hand and forearm and as the anesthesia was more persistent over the hand and inner side of the forearm and arm, one must consider a lesion involving the lower branches of the plexus, namely, the 7 C, 8 C and 1 D. This, however, does not explain the extension of the anesthesia to the level of the 5 D. Also in lesions of the plexus the rule is for the sensory symptoms to regress and the motor to persist, the opposite to the facts in this case. Also if there was some traumatic lesion of the plexus one would expect to find some tenderness or swelling such as might be caused by hemorrhage in the region of the plexus. Nothing of this nature was found. Also at the first examination sensation was found affected, though to a less degree, over a corresponding area on the left side of the body. This would presuppose a bilateral trauma of the plexuses. In view of their location, between the borders of the trapezius and the clavicle on each side, such a bilateral trauma is in the highest degree improbable.

The question of a root lesion I will take up after briefly considering a lesion of the cord itself.

What lesion of the cord could produce the symptoms in this case? Hemorrhage is the only one requiring consideration. Cord hemorrhages, especially when unassociated with lesions of the vertebrae, practically all originate in the gray matter. Hemorrhage into the gray matter of the cervical enlargement and upper dorsal cord could cause all these symptoms, but such a hemorrhage would be practically certain to cause some symptoms in the lower body and legs by its pressure on the tracts running to and from these parts: anesthetics, spastic paralyses, or sphincter disturbances. Also a syringomyelic dissociation of sensibilities, i. e., loss of pain and temperature sense with preservation of touch, is much more common with such a hemorrhage than an involvement of all forms of sensibility as occurred in this case.

There is left a root lesion to account for the symptoms. In the cervical region the spinal roots have an intradural course of about .5 cm. They run from the fairly mobile cord, hanging suspended in the dural canal, to the fixed intervertebral foramina. The fifth and sixth cervical vertebrae are the most mobile of the spine, so when the weight hit and sharply flexed the head the point at which the sharpest angle of the cord occurred was at the level of the seventh cervical and first dorsal segments. As the cord was pulled sharply over the more fixed body of the 7 D. vertebrae there was a sudden stretching of the roots, especially the posterior. Such a stretching could readily cause multiple capillary hemorrhages as well as simple stretching of the nerve fibers. The severe, sharp, heavy pain the patient complained of on regaining consciousness was typical both in intensity and distribution of a root lesion, probably from the 6th or 7th C. The anesthesia occupied the regions supplied by

the 4th, 5th, 6th, 7th and 8th C; 1st, 2d and perhaps 3d D roots. The paralysis being most marked in the hand muscles and forearm seemed to point to greater disturbance of function of the lower rather than the upper cervical roots.

In conclusion this case presented a traumatic lesion of the roots of the cervical plexus and of the 2d, 3d and 4th dorsal pairs, the posterior more than the anterior, and those of the right much more than those of the left. There was also a basilar skull fracture possibly accounting for the late psychic manifestations. Improvement in the psychic symptoms followed directly on the spinal puncture.

DISCUSSION

Dr. Harold N. Moyer, Chicago: This paper I take it is of considerable interest in respect to complicating factors in skull fractures, and I see lots of skull fracture cases.

It is largely for the purpose of emphasizing certain points brought out in this paper that I want to say a word. The view that is held by surgeons regarding skull fractures seems erroneous, at least generally so. A fracture to the skull does not do anything necessarily of itself. The damage is to the brain, associated with it, and that is all that is necessary to find out. I have seen the whole base of the skull torn literally in fragments without the slightest mental symptom or injury to the brain, and, of course, operation was not necessary. There could not be anything done. He lost his eye, lost hearing in both ears and ultimately his other eye disappeared and the inside of his nose ran out, and he never had a mental symptom; never was unconscious, illustrating the fact that it is what happens inside the brain that is important. It seems to me that the skull and brain together should be looked on as a joint; an injury to the knee-joint at first apparently is not very severe. The patient walks, but within a few hours comes on swelling and edema and then the joint has to be opened. This is just what happens in skull fractures. It is the edema and pressure that give you the danger. The rule I follow out is this, and I believe it to be a good one: the patient is brought into the hospital and examined carefully; everything is gone over carefully and then he is generally watched. We do not make the examination and casually look him over a few hours later. I believe that is a very great mistake. In every one of these cases I had the examination is repeated at least every six hours, a complete examination; every reflex is gone over, particularly those about the ankles and the upper extremities. Everything is gone over completely. It is astonishing how many of these cases six, eight, ten, twelve or fifteen hours afterward begin to develop symptoms. The interesting and particular thing about these cases is the recurrence of hemorrhage, and I have never seen an ear hemorrhage come on so late. They generally come on immediately.

I emphasize the statement made by the essayist as to the value of lumbar puncture. If in doubt about anything, do a lumbar puncture. It often has a very valuable therapeutic effect and is always valuable from a diagnostic point.

Dr. Frank P. Norbury, Springfield, Ill.: I would like to mention the mental symptoms which are found in traumatic cases, sometimes immediately following the injury; in other cases at quite a remote period and in others the tendency to recurrent mental symptoms.

Acute or immediate mental changes are usually associated with laceration of brain tissue (or profound concussion), where after a longer or shorter period consciousness is regained and a state of confusion intervenes. Under appropriate rest methods of treatment this condition may clear up. Another type of acute cases is noted where infection results. In these cases we have added the delirium of infection. In the confused cases (properly classed as infective exhaustion types) the differentiation is made difficult, at times, by the fact

that the exhaustion symptoms, "the brain fag," may overshadow true organic symptoms.

Many traumatic cases find their way into the insane hospitals, some of which, if properly recognized, would have been better off under the surgeon's care at home. I have, in my experience, met with many such cases; cases which emphasize the care necessary, immediate observation, as mentioned by Drs. Hamill and Eustace. In this neighborhood we see a good many traumatic brain and cord cases occurring in coal miners and also among farmers. I recall three cases presenting symptoms similar in part, at least, to the case here mentioned.

One, a coal miner, while at work in a sitting posture, was struck in the cervical region by dislodged coal. The symptoms, as I now recall, were slow in disappearing but eventually cleared up excepting a residual palsy of the right arm.

Another case (seen with Dr. C. E. Black of Jacksonville), a farmer, injured also in the cervical region, by being struck while riding on a load of hay, as he entered the doorway of his barn. He had "ducked" his head expecting to clear the passage, but a jolt from the front wheels threw him in contact with the lintel, causing fracture and subsequent palsy.

Not infrequently we see cases of men falling from wagons, hay lofts, etc. In falling, the head is usually flexed and consequent cervical injury results. A farmer fell from his wagon, the hub of the wheel being covered with mud; he slipped, struck the ground on his head. He died from hemorrhage into the cord.

My experience in the use of spinal puncture has been limited in a therapeutic way to meningitis. I dare say it is of value in traumatic cases when done early, and of special value in differential diagnosis.

The remote cases present symptoms of "brain fag," viz.: inability to concentrate attention; confusion in memory; exhaustion on exertion; irritability; insomnia and modified dream states, etc. Hysteria is to be considered and carefully differentiated, keeping in mind the fact that where palsy occurs it may simulate or at least be analogous to organic palsy.

Convalescence from mental disorder following traumatism is slow and in some cases deterioration results where lacerations have occurred or where vascular lesions have been extensive or localized in special regions. Differentiation from general paralysis of the insane is to be borne in mind in such cases.

The perversions of character are worthy of note as an aftermath of traumatism of the brain.

Dr. Carl Beck, Chicago: The kind of cases Dr. Moyer mentioned are almost of the same nature of the cases that we see in the hospital. We ask ourselves the important question: Is it necessary to interfere or not? Is an operation necessary or not? Here, of course, the neurologist can decide a great deal, but not all. The question is, Can you find something in the brain or within the skull for which the surgeon can do something? He can stop the hemorrhage or remove a portion of the bone that is depressed. Those are the two main indications for consideration. But often we cannot determine whether operation is the treatment to apply except by opening the cranial cavity. I follow the rule that if the symptoms increase, and that is the point of great importance, if the increase seems to indicate there is hemorrhage or a pressing blood-clot interference is necessary. The second point is, the interference should be as exhaustive as possible; not only trephining the skull because that alone does not do any good. You have to go within the skull and make an exhaustive examination from the inside and find the vessel that is bleeding, find the depressed bone and remove it. Only by an exhaustive operation can one expect a result.

Dr. Eustace (closing the discussion on his part): In answer to the remarks made by Dr. Moyer as to cases of scalp wounds and skull fractures coming under his observation in the hospital, I have but few words to say. Dr. Moyer states that surgical interference is never made without a distinct indication.

I firmly believe that in all cases of scalp wounds in which the violence necessary to produce them was sufficient to cause hemorrhage within the skull, we are justified to go in and explore the cranium.

We do no harm whatever to the patient and many times find evidence of pathology which would have been overlooked in the earlier stages but would have made itself known at a later time with symptoms of depression.

In regard to Dr. Beck's remarks about exploratory incision in these cases, Dr. Dudley P. Allen tells us that when there are symptoms of intracranial hemorrhage present, if you explore one side of the skull and find no pathology you are certainly justified in exploring the opposite side.

In several of the cases which Dr. Allen reports it was not until the second exploration was made that the pathology was found.

Dr. Sippy has mentioned that often when spinal puncture is made with intracranial pressure the medulla is forced down against the foramen magnum and cardiac and respiratory symptoms follow. This, I believe, is due to the force of gravity and may be overcome by placing the patient in a mild Trendelenburg position. I might also emphasize the importance of watching closely the pulse and respiratory rate.

Dr. Hamill (closing the discussion): I would like to speak briefly of the late mental symptoms. There were attacks in which there was apparently an epileptoid condition present. After the second or third of these attacks, I put the man on small doses of sodium bromid and he has had no attacks since. If this is an affair of concussion and not hemorrhage, the mental derangement, considered from the standpoint of the pathology, may be due to the after effect of the concussion, acting in a measure psychogenetically. The ready control of the attacks by small doses of sodium bromid would seem to bear out this opinion.

COMBINATION OPERATIONS BETWEEN GENERAL SURGEON AND OTOLARYNGOLOGIST *

JOSEPH C. BECK, M.D.
CHICAGO

From a very practical point of view, I believe this subject to be of considerable importance to the general surgeon, otolaryngologist and the patient. In considering combination operations as indicated by the title of this paper, I have divided them arbitrarily into several groups, as those wherein both the operations *must* be performed at the same time, those which *should* be combined and those in which there is a choice, there often being even a counter-indication against such procedure. My conclusions in regard to this matter of two or more operations being performed at the same time are based on the study and personal observation on a fairly large material in the past seventeen years. In order to be as brief, specific and practical as possible, I believe it will be best if I cite a few cases which shall bring out the necessary important points. After all, it is with the hope of eliciting a discussion that I am bringing this subject before this section.

Example of operations that must be performed at the same time.

CASE 1.—Mr. G., aged 53 years, with a negative previous history, contracted during the severe winter weather an acute violent rhinitis of the influenzal type. This became rapidly complicated by a severe acute otitis media and this very

* Read at the Sixty-Second Annual Meeting of the Illinois State Medical Society, at Springfield, May, 1912.

soon by acute mastoiditis. It was the left mastoid that was involved. About the same time the patient developed severe pains in his back and on the right side, with profuse bleeding from this side of the kidney. He was examined by Dr. Carl Beck who made a diagnosis of hypernephroma. This bleeding was uncontrollable, in fact took on an alarming increase as did also the progressive destruction of his mastoid. He had several chilly sensations and the differential blood count showed quite an increase in the polymorphonuclear leukocytes. This made me apprehensive of a septic sinus thrombosis. The indication for immediate interference was very plain, it only remained to decide whether the patient could stand two anesthetics and which operation should be performed first. The end of the argument was that both operations had to be done the same time and nitrous oxid-oxygen anesthesia was decided upon. I may state that if the kidney operation could have been delayed for a time, the mastoid operation could have been performed under local infiltration anesthesia.

It was therefore decided upon to do the combined operation, mastoidectomy and nephrectomy. As mentioned before, it was the right kidney and left mastoid that was involved, which proved to be another stumbling block in the operation. It was necessary for me to practically get on the floor and operate in a very uncomfortable and awkward position, since the patient was placed upon his left side so that the kidney operation could properly be performed. It was the use of the electric drill that made it possible to perform the mastoid operation with comparative ease and rapidity. The electric head light was also indispensable. The patient made an uneventful recovery from both operations.

An example of the second group of combination operation is shown by the following cases:

CASE 2.—L. M., aged 5 years, has large tonsils and adenoids, also a very firm adherent long foreskin. The indications here are plain, to do a tonsillectomy and adenectomy as well as a circumcision.

CASE 3.—J. N., aged 11 years, has tonsil and adenoid disease and a hypospadias. Here too, the tonsils and adenoids are to be removed as well as a plastic on the urethra.

CASE 4.—Mr. L. B., aged 29 years, has chronic infection of his tonsils with periodical attacks of quinsy, also a large cystic growth on the dorsal surface of his foot. The indications are to remove both these pathologic conditions.

A large number of similar conditions have come under my personal observation as they no doubt do to most men, and there is perhaps no reason for discussion, yet it is well to bring out the point that the one anesthetic and the saving of time from business as well as the probable saving of hospital expenses, play an important rôle in encouraging the combination of such operations as to remove both pathologic conditions at the same time.

The third group of combination operations is by far the most important for discussion. These are the cases of so-called operations of choice. I refer particularly to the two structures that have had a great deal of attention in the past ten years, claims being made that many pathologic changes in the body are liable to ensue from their retention within the body and that every one would be better off without them than with them. These are the chronic infected vermiform appendix and the chronic lacunar tonsils especially of the adult. The question often asked is, that while removing the appendix why not also the tonsils at the same sitting? Speaking from experience in a fair number of such cases, I would say

that it should not be done. Not that I have any untoward result to report, but one operation may mask the symptoms of the other, and no clear course of the operation can be followed. Again either one of the operations is severe enough without adding more pain, shock or discomfort to the patient. I had one instance in which, owing to the retching from the abdominal operation, the patient kept on oozing from the tonsillar wound much longer than he ordinarily would have from the tonsil operation alone, and this is no small matter, because the loss of blood may retard the healing of the appendix wound. In cases of operations on the chest, as empyema, etc., the tonsil operation should not be done, because such patients frequently cough and keep up the bleeding.

The last group of combination operations are those in which there is a question whether they are such, since in the past few years the otolaryngologist has extended his surgical sphere. I have reference to regional operations about the head and neck, as glands of the neck, tumors, external nose operations, operations on the jaws. Many a time there is required work in as well as outside of the cavities. I have long held and expressed myself accordingly, that as modern otolaryngologic surgeons, the work is to be performed by himself, and the only question is whether in one or more sittings. There cannot be made any rule, since each case is a law unto itself, yet a few examples may be mentioned. In the cases of external plastic surgery of the nose, there is frequently intranasal work necessary, and that can be done in one sitting; the same is true in palate and throat operations, such as adenoids and cleft palate. In regard to operations on the neck, I desire to warn against the practice of doing, for instance, a tonsillectomy and removal of glands more than possibly opening a broken-down mass or removing a gland for histologic examination. The radical removal of glands at the same time or even too soon after the removal of the tonsil, can and has led to necrosis and suppuration, with protracted recovery. This is very likely due to the marked destruction and obliteration of the vessels, thus reducing the vitality of the tissue and retarding repair, since the circulation is not good.

In regard to thyroidectomy and tonsillectomy, I wish to express the same views based on personal observation. I have seen a case in consultation where this had been done; this patient was ill for months after operation, although the work was performed by skillful operators.

One of the worst results from cases of combination operation that I have even seen was within the accepted field of an otolaryngologist, namely, an operation for acute mastoiditis, tonsil and adenoids. The septicemia in this case was very marked and neither the tonsil nor the mastoid wound healed well, and the little patient was very ill; whereas either one of the operations performed at different times would have very likely not hurt him at all.

We can, therefore, conclude that there are:

1. Distinct indications for combination operation, wherein both *must* be performed at the same time.
2. Distinct indications for combined operation wherein both *can* or *should* be performed at the same time.

3. Distinct *contra-indications* for combined operation, wherein there are pathologic conditions in more than one place and requiring surgical intervention.

Combination of otolaryngologist and gynecologist both in operation and diagnosis has occurred in my practice several times, and I wish to mention two interesting facts in this connection.

Dr. Rudolph Holmes referred to me a young woman, aged 21, who had diseased tonsils with considerable anemia, and also a history of never having menstruated. While I had the patient under general anesthesia, Dr. Holmes was enabled to make a thorough gynecologic examination to find out the possible cause for the amenorrhea.

In several cases of marked endometritis, in which the attending man found the indication to do a curettage, etc., and also requiring the removal of the tonsils for chronic tonsillitis, I have made the positive observation that the bleeding from the tonsils was much less in this combined operation than ordinarily from simply a tonsillectomy. It is, of course, well known the interdependence of the generative organs and upper respiratory tract as far as the vasomotor systems are concerned and that may play a rôle in this phenomenon.

2551 North Clark Street.

DISCUSSION

Dr. W. L. Ballenger, Chicago: Mr. Chairman: I do not know that I am qualified to discuss this paper. I was not able to follow out with clear thought just what the doctor was trying to tell us, unless it be that under certain conditions abdominal operations and throat operations or nasal operations, or ear operations, that it might—especially of the throat—be inadvisable to operate because the patient's coughing might interfere with the abdominal wound, etc., which is very well taken. I have personally operated on the mastoid and adenoids at the same sitting a number of times and have never seen the unfavorable results described in the doctor's case. So it had not occurred to me it was bad practice; I thought it was good practice and always so recommended.

It occurred to me also in the case cited if you operated on the adenoids and let the mastoid alone it might have gotten well. In young children with mastoiditis for months, not yet fully developed, I am sure that the adenoid and tonsil operation, or adenoid alone, would often result in chronic or subacute otorrhea, so perhaps it might be well in young children particularly to resort to the tonsil and adenoid operations and wait and see if the mastoid would not get well of itself. I have seen adults upon whom I operated refuse to get well after a radical mastoid operation. The doctor here saw one of my cases of that type and I think many of the adult cases of marked mastoiditis would possibly get well if you removed the adenoids and not do a mastoid at all.

I have not had much experience in operating with other surgeons doing a combined operation, and am unable to speak with any degree of intelligence on the subject.

Dr. Otto Stein, Chicago: I think we all recognize the advisability of limiting the amount of anesthesia in operating on patients and where it is possible, I think to perform two operations that will not interfere in any way with the operators or the length of time of the operation and the length of time of the anesthesia where they are absolutely essential to be done. I think it probably well to do so. I personally have not had any experience with other surgeons. I feel the same as Dr. Ballenger has expressed himself that many of these cases where there are two diseases present, for instance pharyngeal tonsils and ear symptoms, or diseased tonsils or nasal sinus disease in a person with a suppurating

ear or some remote disturbance of the lower respiratory tract, as an asthmatic condition, or ulcerative condition of the vocal cords, that frequently removing the one source will correct the other condition; thus removing adenoids or cleaning out accessory sinus disease will obviate any necessity for a mastoid operation. Of course, that is away from the subject, but it is a point that I think ought to be considered in connection with this paper.

Dr. Richard J. Tivnen: I was very much interested in Dr. Beck's paper. It is quite a new subject and one that deserves a considerable amount of reflection. We are frequently brought face to face with the problem and asked by our patients if we cannot operate with the general surgeon and make it one anesthesia, and one operation, and one period of invalidism. I believe we ought to be rather cautious in our willingness to consent to the wishes of the patient in this regard. There is already an altogether too prevalent opinion among the people about the so-called trivial side of quite a number of our operations—tonsil, adenoid, submucous operations, etc. If we encourage our patients in this impression it will not be long before we are placed in a very embarrassing position. I would, therefore, like to simply make the statement that I believe we ought to insist that the responsibilities our operative work imposes be not under-estimated, that we be not too willing to occupy a secondary position and that our cases be surrounded with the same safeguards as are accorded those of the general surgeon.

I very much enjoyed Dr. Beck's paper.

Dr. Jos. Beck (closing the discussion): My purpose in bringing this paper here was to bear the experiences of men who are called upon to work with the general surgeon as I am frequently asked to do when there is not much chance to refuse. It is not a question of "if I am going to do it with the general surgeon," but I am told that I will be expected to do it, and that settles it. I have objected and often it has done no good, so I have had quite an experience with the general surgeon.

My point was not that the operation on the throat would cause coughing and disturb the abdominal wound, but that the patients with abdominal operations frequently have retching and nausea which irritate the throat wound. That was my point; and also the loss of blood from the tonsil operation interferes with the general healing of the wound.

This point of removing the probable cause, as adenoids and tonsils, and letting the mastoid or other operations on the ear alone, of course, was not mentioned in my paper.

Dr. Tivnen raised the point about standing on the same merits as the general surgeon and so on. I find that the general surgeon will do his operation, and the nose and throat man would have to wait until his chance came and hurry through, and the main trouble was that the patient was not properly anesthetized, either too deeply under or has already come out. With very few exceptions should we combine operations of choice.

SOME PLEASURES OF THE COUNTY SECRETARY *

S. W. WEIR, M.D.

MARSHALL, ILL.

Mr. President and Gentlemen:—I know each of you is wondering, "What will he say about pleasures, when the county secretary has so many troubles?" Therefore, from necessity and not from choice, what I have to say will not worry you long.

When thinking of the pleasures of the county secretary, they seem rather obscure, just like the gardener, who put his seeds into the ground

* Read at the Secretaries' Conference, Springfield, Ill., May 21, 1912.

the day before a big rain and, on reading next day that a frost was predicted, went to look at his garden and found it all under water. After reflecting a few moments he said: "Well, I guess the frost will not get them anyway." So it is with the secretary. If he goes ahead and does his duty, we can look through the mist of troubles to the pleasures ahead.

The doctors, at different places over the county, have most of the pleasures. All that the secretary has to do is to furnish material for each one to work with, keep them preparing papers, acting on committees, and most important of all, attending the county medical meetings. Then the secretary has the pleasure of seeing his society grow scientifically, numerically and get more enthusiasm.

To illustrate: During the year 1910, our society met quarterly and three of those meetings were held at the county seat and our largest attendance was 8, smallest attendance 3, average attendance 5, and during the year 1911 we met quarterly and at four different towns and our largest attendance was 15, which was at our last meeting, smallest attendance 9, and average attendance 12. At the beginning of 1910, we had fourteen members out of a possible 28, while at the first of 1912, we had 22 members out of a possible 27. This gain is attributed partially to the fact that we met at different places over the country, arranging to meet at places difficult to reach, so as to go in autos when the roads are good, and to other places on the train. Thus, by going each time and saying, "come on with us doctor," some have become interested, and if we can get as many more interested during the next year, we will have the pleasure of having every practicing physician in the county a member of our county medical society.

Sometimes, there is "more pleasure in pursuit than in possession." At present, we are still in pursuit, trying to enlist every physician in the county in the society. During the coming year, instead of meeting quarterly, we expect to meet every other month and in more places than we did the past year; also have arranged some social meetings, where we will have cats, that get very near (and dear) to some physicians, as well as a business meeting, where we expect to discuss fees, fee bills, collections and investments. This also gets close to some of our doctors.

It is a pleasure of the secretary to have willing counselors, to assist in planning the affairs of the society, so as to lead non-members to see that *booming* the *society* is to their own *personal gain*, and a *duty* that *they owe* to *themselves* and the *profession*.

One of the pleasures of the secretary is that he (to a certain degree) becomes personally acquainted with every doctor in the county, whether a member of the society or not, for he writes them frequently and converses with them at some time during the year. Also when anything of special importance comes before other county societies, the secretary has the pleasure of learning it first and imparting such information to the other physicians of the county.

The secretary comes into closer contact with every physician in his county than any other officer of the society, and, by getting an idea now

and then from each one, casting aside the worthless, coalescing the good and continuing to grow from month to month and year to year, he will finally attain that high state of perfection which we all hope to attain. Just like a small rock in a mussel-shell by continually rolling around, casting off the roughness and worthless parts, adding to the luster and brilliancy of itself; finally becomes a *pearl*. Very few of *us* ever attain this position.

In our county society, during the last several years at the annual meetings, there has been a program committee appointed and the secretary is one of them, who has to worry and ask doctor after doctor for a paper at the different meetings for the coming year, usually taking from two to three months to get a program arranged. But this year we planned three sets of meeting places, subjects to be discussed at each place and physicians to write on each subject. These suggestions were as follows: First, to meet every month; second, to meet every other month; third, to meet quarterly. I inclosed those suggestions, with the notice of the annual meeting, so that if any physician had objections to writing on the subject assigned, he could appear at the annual meeting to defend himself. As a result, we had the pleasure of a larger attendance than usual, *no objections to writing papers* and, when the meeting was over, our program was completed for the year, with the meeting places arranged so that half of the meetings we can go to in autos and the other half on the train.

"Variety is the spice of life" and conditions are different in each county; therefore, each county secretary, to get the most pleasure out of his work, must adapt himself to the circumstances. Our society seems to do best by arranging programs, so that each member will be the main essayist, at least once in two or three years and act on some committee or hold an office in the society between times. Also by arranging the meetings so that some of them can be attended in autos, all meetings arranged as convenient as possible for the majority of members. Another important part is to arrange programs so as to mix social and business affairs with the scientific work, also enlist every member of the society as a helper if possible.

THE COUNTY SOCIETY BULLETIN *

W. H. WATTERSON, M.D.

WAUKEGAN, ILL.

The inspiration resulting from Dr. E. W. Fiegenbaum at last year's state meeting and his most excellent little paper, "The Madison County Doctor," has caused many other societies to make effort along this line, notably the Montgomery, the Champaign and Lake County bulletins. There may have been others, but their issues have not come to my desk. The physicians of the counties outside of Cook County do not come in as close contact with each other as they should. I doubt if this is true

* Read before the Secretaries' Conference, at Springfield, May 21, 1912.

even in Cook County. Therefore, any means of bringing the physicians in closer relation to each other is of great value to the medical welfare of any county society. I have observed from our own bulletin and from that of other counties that we all still look to the mother bulletin, that of Madison County and that the good work of the Madison County secretary is being copied by all the other journals. Articles therein have united the physicians and made a fraternal band much stronger than ever existed before. Such articles as "Dr. McCormack's Oath," "Which Group are You In," "Loyalty" and "Our Creed," all of which appeared originally in the *Madison County Doctor* have been copied by other bulletins to the great benefit of fraternal feeling in every county now publishing a bulletin.

We are peculiar individuals, in that we avoid the press. Nothing is said of our work, of our papers, or of other happenings which would bring physicians' names in the public press for fear of criticism of our fellow physicians. Whether this is carried to the extreme or not I am not ready to discuss. However, it is only natural that some recognition of the physicians' doings should be made to their fellow physicians, and the only means we have throughout the counties is by way of the county society bulletin. I doubt if there is another pamphlet that comes to the table of the average physician in any county now publishing a bulletin that is read more thoroughly and with greater interest than the county society bulletin. It is natural that we should take interest in those things which concern ourselves; for our own betterment, for our better relation with each other and the public at large. Therefore the county society bulletin has earned a place in the county society which can never be displaced. I recommend it to every secretary to take home to your society. First, try it out. Pay a little money out of your own pocket, if necessary, for the first and second issues. Thereafter I assure you as one who has tried it that there will be no difficulty in continuing your little paper in your community, and that its results and its influence will be for good that could not be accomplished in any other way. You may say "our society is dead." "We are not doing much." Nothing will help to build it up and make it more alive than to publish a bulletin. In this bulletin, not only you, but any member of the society may express his opinion on matters of relation to fellow physicians as our duty to each other fraternally, public health, advertising and the prevention of disease, your individual experiences with some new remedy, and best of all, the reports of meetings and some strong points along the line of bringing the physicians *in closer touch with each other*.

I would like to ask of the secretaries of those societies which have tried the publication of a bulletin in their separate counties whether or not they would be willing at this writing to do away with their bulletin and the influence that the bulletin has in keeping their society in good condition. I believe I can answer that, but trust that following this paper there will be discussion by the secretaries who publish a bulletin, and I am sure that not one of them will be willing to give up the bulletin. As to means of paying for same. A small increase in the county dues; some small advertisement, or, as is done in Madison County,

two hospitals are now supporting their bulletin by a one-page advertisement. The Secretary, or some one delegated by him, should publish the bulletin and he should receive data and articles from any of his fellow physicians. Have an editing committee to assist him; and, if too busy, turn over the entire paper some months to some member of the editing committee. He may have a hobby which he cannot let loose of and some other member of the committee may have another hobby that he would like to mention. Then let him, for after all, a man without a hobby never accomplished anything.

Then though I cannot be with you this year, I send this message: "Try the bulletin for your society if you want to make it a better society than it is now."

MY NEW YEAR'S PHILOSOPHY

Of nineteen twelve here is the end,
And still I have in mind a vision fine,
A god of love is mine,
And human-kind a friend.

A score or more of failures glare
Like beasts of prey to snatch away content—
But I shall not lament
What's done, if done for fair.

For this I also know full well,
Ne'er saved or certified by vain regret
Was spilled milk, as yet
And vain regret is Hell.

On temples brown the silvering loom
Of Time doth weave a record web, I ween,
Of passing years, unseen
And silent as the tomb.

But what care I at all
With dearest pal and children at my side
And gold enough beside
And roof to cover all?

With band of steel and heart of love
And brain and eye and conscience fairly clear,
'Tis good to live, I fear
Not Death, 'tis life I love.

Then hail! The young year's vim and dash
That beckon all to win anew the race,
The records good to face
And precedents to smash.

—ARTHUR M. CORWIN, M.D. CHICAGO.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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JANUARY, 1913.

MODERN STATE BOARD OF HEALTH

Doctor, have you written to Governor-elect Dunne asking him to appoint a real modern State Board of Health, and a secretary who is worthy of the confidence and respect of the best people in the state? If you have not yet joined in this crusade get busy at once. A large number have already made this matter plain to Mr. Dunne. At least 90 per cent. of the profession are in favor of a change and should not be backward in making the fact plain.

THE PANAMA TRIP

The proposed trip to Panama mentioned in our last issue, has appealed to a great many of our members and it is probable that at least one hundred will take advantage of this last opportunity to see the greatest engineering and sanitary feat of modern times. The excursion is dated to leave about March 1, sailing from Key West on the new Evangeline of 5,600 tons, which carries no freight and is clean and speedy. Key West is the nearest point in the Union to Colon, making the sea voyage nearly three days less going and coming than from New Orleans. A circular letter giving full details of the trip will be mailed by the Travel Service Bureau of St. Louis to every member of the society in a few days. Every member of the society should consider this matter and if possible make the trip. We call attention to Dr. W. H. C. Smith's letter in our correspondence columns.

PANAMA TOUR FOR MEMBERS OF ILLINOIS MEDICAL
SOCIETY AND OTHER PHYSICIANS AND THEIR
FAMILIES AND FRIENDS, VIA FLORIDA,
JAMAICA AND CUBA, IN MARCH

Arrangements have been completed for the Panama trip for members of the Illinois State Medical Society and other physicians and their families and friends, which was mentioned in the December issue of the JOURNAL. An advertisement of the trip appears in the advertising pages of this issue, and reservations may be made or further information had through Dr. Geo. N. Kreider, editor, ILLINOIS MEDICAL JOURNAL, 522 Capitol Avenue, Springfield, Ill., or the Travel Service Bureau, 922-23 Central National Bank Building, St. Louis.

The tour will be managed by the Travel Service Bureau, which organization had charge of the St. Louis Business Men's League Panama trip last year, and will have charge of a trip to the Isthmus for the same organization again this year, as well as one for the Memphis Business Men's Club. The service of this company consists in furnishing Pullman, dining car, steamer and other accommodations, and in putting a tour manager, familiar with conditions in Panama, in charge of the business details. The company is highly recommended by the St. Louis Business Men's League and others.

Reservations for seventy-five persons are being held for the Illinois Medical Society party, and inquiries already received indicate that all of them will be taken. If so, a special train will be operated from St. Louis, and the party is promised luxurious service. The train will be composed entirely of Pullman sleepers, together with private dining, club, baggage and observation cars. Only members of the party will be carried. If fewer than seventy-five go, accommodations will be on the regular trains to Palm Beach and over the Florida East Coast to Key West, including the famous "sea-going railroad."

High class service is promised the party throughout. Outside staterooms only are reserved on the steamer, and the price of the trip includes the choice of any stateroom. A few suites are charged for extra.

Between thirty and fifty inquiries have been received regarding this trip, and it is advisable for members of the Society who desire to go to book early. Checks for \$25 deposit on each ticket desired, made payable to the Travel Service Bureau, may be sent to this office and the best reservation available will be made when the check arrives. Only two persons will be put in a stateroom. Further payments of \$100 per ticket will be due February 15, and the balance on or before March 1. Detailed information as to prices and what the tour includes will be found in the advertising pages.

Considerable delay in deciding on this trip has resulted from the effort necessary to get a sufficient number of reservations on one steamer and by a route which would give members of the party an opportunity to see as much as possible on the trip. Further arrangements for the pleasure and comfort of the party in Panama are being made, and while

these are slow—since it takes so long to get mail to and from the Isthmus—they will be completed as rapidly as possible. A representative of the tour will go to Panama in February to look after advance details. Every factor to economize the time of members of the party while they are in Panama and give them an opportunity to see just as much as possible will be utilized, and a special effort will be made to give physicians an opportunity to study hospital, sanitary and other conditions of direct interest to the fraternity.

Any reputable physician, whether a resident of Illinois or any other state, is welcome to become a member of the party. Such persons may recommend their friends to the trip also, and non-physician members of the party will be given the same attention as the physicians, except that special receptions or entertainment features may be included in Panama to which invitations may be extended only to the physicians, and which, as a rule, will have little interest for persons outside the fraternity.

It is stated that most desirable climatic conditions in Panama and an entire absence of storms on the Gulf of Mexico may be expected in March. The steamer will reach Key West, returning, March 15. The stay at Panama is two days, with the same time at Jamaica. Only two hours are spent at Havana, but those who so desire may stay over there, their tickets being good on any P. & O. steamer to Key West, with service daily, except Sunday. Stops may be made at other points, with a cash refund for unused Pullman and dining car coupons.

EPILEPTIC COLONY FOR ILLINOIS

Time after time the people of Illinois have through their chosen representatives expressed the belief that the unfortunate epileptic should be taken care of in a modern way in a state institution. Unfortunately, these same representatives have been playing politics and other games too industriously in the past to bring this matter to a conclusion. We are glad therefore to know that an influential committee of members of our society and citizens, have taken active steps to secure an appropriation for a colony from the next general assembly. We urge our members to give this project the heartiest support. Do not stop until the epileptic is provided for.

CHICAGO MEDICAL SOCIETY EX-PRESIDENTS' BANQUET

Invitations will be sent later to all of the members of the Illinois State and Chicago Medical societies for an informal banquet which is to be given by the Chicago Medical Society to its ex-presidents on Lincoln's birthday, Wednesday evening, February 12, 1913. The President of the Chicago Medical Society and the Entertainment Committee are planning that this shall be one of the social events in the history of the Society. As an "event" is an impossibility without the ladies, the wives and sweet-hearts and friends of the members are earnestly requested to accompany them. The tickets are to be \$2.50 for each plate. The seats will be

arranged in order of their acceptance so that groups of consecutive members may be kept together, except in the instances where certain members request to be assigned to the same table.

RESOLUTIONS ADOPTED BY THE ROCK ISLAND COUNTY MEDICAL SOCIETY, DEC. 10, 1912

WHEREAS, The University of Illinois has been compelled to close its medical school in the city of Chicago, owing to lack of legislative appropriations for its support, and owing to the fact that it possesses no suitable site or plant for the use of a medical school after the College of Physicians and Surgeons had declined to continue the lease of its plant in said city to the University; and

WHEREAS, Certain parties have undertaken to obtain the stock of the College of Physicians and Surgeons and present the same to the University, thereby securing to the latter the control of an adequate site and plant for its medical work; therefore, be it

Resolved, 1. That the Rock Island County Medical Society earnestly requests the trustees of the University of Illinois to reopen the medical school of the University in the city of Chicago, and that the members of this Society hereby pledge themselves to use every legitimate influence to secure adequate legislative appropriations for the support of the state medical school to the end that the commonwealth of Illinois shall do its share in the support of medical research and education as it now does in the support of agricultural, legal and engineering research and education. 2. That the President of this Society be requested to appoint a committee to cooperate with similar committees from other county associations to present this project to the members of the legislature and urge it upon their attention.

Correspondence

THE MEMBERSHIP OF THE ILLINOIS STATE MEDICAL SOCIETY

To the Editor:—The Medical Society of the State of New York has 7,293 names on its roll. The Medical Society of the State of Pennsylvania has 5,830. The Illinois State Medical Society is third in number of members with 5,708. President Nickerson urges that there is no reason to prevent Illinois leading all state medical associations in numbers. There are approximately 4,500 licensed physicians in the state who are not members of their county medical societies. Half of this number we feel assured are qualified for membership, and that our number can be increased to exceed the membership of the Medical Society of the State of New York without sacrificing standard of qualification. In order to accomplish this desired increase of membership, the Council of the Illinois State Medical Society has entered into an agreement with the American Medical Association to canvass the medical men of the state. Each of

our counties will be visited by an organizer who will solicit membership from the physicians of the county. His activities will be subject to the directions of the officers of the county societies and he should receive the cooperation of these officers in his efforts. The work has already begun and in several of the counties which have been visited, a gratifying return has been made. These returns have been especially pleasing in those counties in which the officers have welcomed the organizer and by their cooperation have helped to make his visit a benefit to the local organization.

Of all men, physicians need most to get together. Those of us who have been active in our medical organization appreciate its benefits most highly. President Nickerson now calls on us to bend every energy to extend these benefits to those who, with reason or without reason, have denied themselves the privilege of uniting with the organized profession.

Let us one and all join with this endeavor to extend membership in the state of Illinois, being assured that as our membership grows, the benefits from our meetings will increase.

E. W. WEIS, Secretary.

INSURANCE OF THE SICK AND INJURED IN GERMANY

In the December issue of *The Journal of the Oklahoma State Medical Association* appears a letter by Dr. Fishman on this subject, which is of particular interest to our readers at this time, and by permission of the editor of that journal we reproduce it herewith.

The German empire exercises a most paternal relationship over its citizens and I guess that's the reason it's so fondly called the Fatherland. It cares for them everlastingly from birth through old age, and provides for the unfortunate, sometimes directly, but more often indirectly, almost as a father does over his children.

From the point of view of a medical man, I found the provisions that the government has established for the care of the sick, injured and the aged of the greatest interest. Being in close contact with the sick, as one sees them in the hospitals and polyclinics (dispensaries) I was at once impressed with the widespread system of sick benefits and insurance that is provided nearly every individual of the poorer and middle classes.

The Imperial Insurance Acts have been in force now for over thirty years and have been so successful that it now provides compulsory protection for nearly all of its working men, as well as employees in nearly all lines, whose incomes are moderate. It was established "in order to preserve internal peace and to foster safety and protection to the Fatherland."

Within the last three months England has established a law on a similar basis, although the Englishman is unwilling to state that it is patterned after the German law.

The Sick Benefit Act provides that every employee whose income is less than 3,000 marks (about \$710) a year, be compelled to buy monthly insurance stamps, which may be obtained in every postoffice, and have his

employer sign these stamps after having pasted them in a book, supplied for the purpose. This, of course, is supervised by police regulations, that no one who comes within the law is exempt. Of the cost of these premiums the employer pays two-thirds and the employee the other third. Frequently in case of a housekeeper who employs a servant, the former undertakes to pay the entire premium, which amounts to about one mark (25 cents) per month. Each trade and vocation has its own branch, for example, the stenographers, carpenters, masons, etc. Each has its own organization and the money obtained from the sale of these premium stamps is held in trust by the government.

The committees which have charge of the affairs of these branches are made up of employers and employees, but the latter have a representation of two-thirds of the committee, although they receive the benefits and pay about one-third of the premiums. It is the duty of the employer to see that his workmen are insured and if they are not provided for, the former is held responsible and is required to pay all expenses in case of illness. The entire system then is essentially established for the interests of the working people, and indeed for the poorer classes, for there are also provisions for the individual who conducts his own business, but whose income is below a certain amount.

In the farming communities the participants include alike the employers and the employees who have mutual interests, but in these cases the affairs of the branch organizations are managed by officers of the state. Besides these, the labor and trade organizations have their private benefit funds just as they do in our own country. The workers in hazardous trades are compelled to provide accident insurance so that they are protected by this means from losses that may occur in case of occupational injury or illness.

The Invalid and Pension Act provides monthly benefits for those who show payments for a certain number of years, and in all cases after the age of 65 or 70 years, depending on his vocation.

In case of an unmarried girl, who marries, a certain amount is returned to her at the time of her wedding, provided she has paid premiums for 200 weeks or more. The widow is also provided for, and a certain amount is received for each child under 15 years of age.

The organization provides medical attention by employing physicians and also pays for the care of patients who are sent to hospitals. Each specialty is well represented on the rolls of the medical attendants. Certain branch organizations have their own hospitals and convalescent houses. The fundamental purpose of the sick benefit provision is not to spend all of their money in the care of the sick, but rather to conserve health by providing proper workmen's homes, proper food for the children, summer outings, etc. The system is so extensive that the total income for 1910 was nearly 900 million marks, and took care of nearly six million cases, while there is over two and one-half billion marks assets in the trust fund.

Naturally the practicing physician is deprived of a good percentage of people who might have been his patients if these laws were not in effect.

But when one remembers that after all, the poorer people only are provided for, it leaves the physician with a private practice of only the better classes at his disposal. Besides, it must be remembered that we have in the United States about three times as many physicians for the population as there are in Germany, so that the system does not produce as much discomfort to the profession here as it would in America.

C. J. FISHMAN, of Oklahoma City.

Berlin, October 22, 1912.

DETAILS UNDERCHARGES

GREENVILLE, ILL., Dec. 23, 1912.

To the Editor:—I was very much interested in Dr. Allison's article "The Trend of Medicine" in December issue of the JOURNAL. Dr. Allison is right. The medical profession is not what it ought to be. There is a remedy, and that is through and by the county medical societies. Let's have a symposium in the JOURNAL on this subject, "Looking Forward to a Reform Among Physicians in Regard to Fees." I know of a doctor who went seven miles on a confinement case and only charged \$5, whereas he should have charged \$10, plus mileage beyond three miles. The same doctor goes a distance of seven miles (ordinary sickness) for \$3.50, and I've even heard of him going twelve miles for \$4.

I know of another doctor who goes ten miles from home (two miles from another doctor) on a confinement case for \$10. This same doctor will go eight miles and ten miles for \$3.50. Now neither of these doctors are poor either. They both have a practice, but got it largely by undercharging and thus knocking some other doctor out of a fee. It seems to me that doctors ought to see that they are losing time and money by such acts, and also are giving their medical brothers a dirty deal.

The first doctor mentioned should have charged \$10 plus mileage for confinement, and \$4.50 or \$5 for going seven miles (ordinary sickness), and especially when he goes across the street from a brother physician in a little village seven miles distant.

The second doctor should have charged \$15 for going ten miles on a confinement case, and \$5 instead of \$3 and \$3.50 for going eight miles. In both cases they could get more.

I charge \$3 for going four miles, and the people wonder why I charge \$3 for going four miles when other doctors from seven to ten miles away will come for the same price. I would like to see fee bills published that are adhered to, also a discussion of physicians' fees. Too many physicians only charge fifty cents for medicine at office, when they should charge 75 cents and \$1. I claim that our knowledge of what they need is worth 50 cents to the patient without any medicine. The medicine ought to be worth from 25 to 50 cents additional. Our medical education cost us from three to five thousand dollars, and we didn't get any hand out either.

O. C. CHURCH, M.D.

REGISTRATION OF VITAL STATISTICS

STANFORD, MONT., Dec. 13, 1912.

To the Editor:—I have just been reading the article by Dr. Henry G. Ohls, and I am going to offer a few suggestions along lines I have never seen mentioned. In the first place, I am opposed to the principle of a fee for registration. We doctors are practicing medicine for the fees we obtain, and when engaged by a patient our duty is to see that everything necessary is done for that patient, and to charge them for the service rendered; and when I am called to attend a confinement case, my duty is not done until I have recorded that birth, and when a patient dies my duty is not done until I have filled out and placed on record the essential facts as required by a death certificate, and when I discover a case of contagious disease my duty is not done until I have properly reported it. But I do believe the state should cooperate by providing blanks in the most convenient form, and pay the postage on these. But this is preliminary. How are we going to be sure of getting these reports? And where is the originality of my plan? At present a young man graduating from college must secure a license to practice, and having secured that, goes on through life without any further interference so long as he stays in his own state, and does not violate too many criminal laws. But I would abolish this perpetual license, and instead, require the doctor to present his credentials, and if these are satisfactory, issue a license to practice medicine in the state until the first day of February next following, and require him to keep this exposed in the waiting room of his office. I would at the same time provide him with the necessary blanks for all required reports, and stubs attached to each blank permanently bound, and between January 1 and 10 of each year require each physician to make affidavit that the stubs represent each and every birth, death and contagious disease by him attended during the previous year; that the detached blanks have been filed with the proper local authorities as required, and thereupon let the State Registrar issue a new license for one year from February 1 to February 1. You will thus have a complete list at all times of all physicians actively in practice, not an unrevised list, and with a complete list of each physician's work on file; you will stimulate more careful attention on his part, and will be assured of just as complete records as can be obtained.

Yours sincerely,

A. E. MYRICK, M.D.

THE EXCURSION TO PANAMA

Dec. 11, 1912.

To the Editor:—I note in the ILLINOIS MEDICAL JOURNAL the announcement of the Panama excursion, and am delighted to know you are taking the matter up, and hope a full boat load or two will take advantage of the opportunity of going this year, as next year will see the water in and consequently one will lose much of interest in the prodigious work of organization and operation, both on the side of medical science and mechanical miracles. I hope you can go, for the trip is a most delightful one, full of interest from New Orleans back to New

Orleans, and accommodations on United Fruit Company steamer are not surpassed for comfort anywhere. I have been down twice with Mrs. Smith and took my three boys. The trip will not be complete unless you add the Costa Rican trip up to San Jose. Hope you will make it a success.

Yours truly,

W. H. C. SMITH.

NEW LAW WANTED

PEORIA, ILL., Dec. 28, 1912.

To the Editor:—We have put up with considerable in past years as regards the requirements of applicants to practice medicine in this state, and I think it is about time there was a change.

First of all, all medical schools attempting to teach medicine properly should require of their applicants evidence of a preliminary education, of a diploma from a *registered* high school plus *two years of college work* or its equivalent proven only by a *fair and rigid examination* by men competent to give such, and these men appointed by the Governor. This above should become a law and take effect not later than January 1, 1914.

We certainly could profitably follow, at least, New York State in their new requirements and abolish those which did not come up to the requirements as to preliminary education and curriculum, and then we would have more than two schools in the state recognized as medical schools, and graduating men that are considered competent enough to practice medicine. Does it not appear to you that at least two of those low-grade medical schools are in partnership, as both have practically the same faculty? No doubt there will be a change of affairs after our new Governor Dunne takes office.

Hoping to hear from you in the JOURNAL, I remain

Yours truly,

JOHN WARREN.

NEW REQUIREMENTS FOR TUBERCULAR CASES IN COOK COUNTY INSTITUTIONS

CHICAGO, Dec. 31, 1912.

To the Editor:—On December 30, the Chicago Tuberculosis Institute submitted to the Public Service Committee of the Board of Cook County Commissioners, the following list of requirements to be considered in connection with the care of advanced cases of tuberculosis in the Cook County Institutions—Tuberculosis Department of the Cook County Hospital, Tuberculosis Hospital at Dunning and the Tuberculosis Hospital at Oak Forest.

1. Increased medical service for the tuberculosis patients; at least one resident physician for each seventy-five to one hundred patients.

2. Increased and improved nursing service; at least one nurse for each thirty to forty ambulant cases, and at least one nurse for each fifteen to twenty bed patients; of these nurses at least one for each fifty patients should be a graduate nurse. A sufficient number of attendants.

3. An adequate, well-prepared and well-served dietary of a standard set by recognized authorities in the treatment of tuberculosis.

4. The appointment of a staff of recognized tuberculosis experts to serve without pay who shall advise and cooperate with the Board of County Commissioners in the establishment and maintenance of these standards.

In conformity with the request of the Institute, the Public Service Committee unanimously voted the recommendation to the Board of County Commissioners that the Annual Budget for 1913 should include an appropriation to cover the cost of the improved service.

Sincerely yours,

JAMES MINNICK, Superintendent.

STUDENT VOLUNTEER MOVEMENT FOR FOREIGN MISSIONS

WOMAN PHYSICIAN FOR KOREA

To the Editor:—A Christian woman with medical training is needed in the Canadian Presbyterian Mission, working in the Northeastern part of the Korean Peninsula with headquarters at Jen San, about 135 miles north of Seoul, the capital.

A wonderful Christian opportunity is presented in this section. The population in this one field is greater than that of New Brunswick, Prince Edward Island and Nova Scotia combined. All Canada has over 6,700 physicians—one to every 1,030 people. In this section of Korea there are less than a score of physicians.

Instruction in hygiene in a country that has never learned the very first principles of cleanliness, suggests one large service which a medical missionary can render.

A start has been made in work for unfortunate classes, such as the blind, deaf and dumb, lepers, opium victims and orphans; work which needs to be developed and strengthened.

A WOMAN PHYSICIAN IS NEEDED FOR THE MARY S. ACKERMAN HIOYT HOSPITAL AND DISPENSARY FOR WOMEN AND CHILDREN, JIHANSI, INDIA

This is a Christian hospital, opened in 1900, two years after a dispensary had been started. In one year more than 10,000 treatments have been given, 530 in-patients cared for, in addition to many visited in the city and district.

Jhansi, a city whose population is 55,724, is situated in nearly the geographical center of India. It is a large military cantonment and civil station, and the headquarters of the Indian Midland Railway Association. Throughout a vast region for hundreds of miles villages are thickly scattered, in very few of which the Gospel has ever been preached. The city and region are full of Mohammedans in addition to the Hindus. There are not more than fifteen foreign Christian missionary workers in the community.

This post requires a woman of thorough medical training, unimpaired physical constitution, good sense, sound judgment, capacity for leadership, a cheerful, hopeful spirit, ability to work pleasantly with others.

Support is provided by the Woman's Union Missionary Society and includes traveling expenses, living quarters and outfit allowance, in addition to the regular missionary salary, which is based on what experience has shown to be necessary to maintain the worker comfortably.

TWO YEARS' INTERNSHIP — GOOD SAMARITAN HOSPITAL,
GUANAJUATO, MEXICO

This is a missionary hospital which was started by the Methodist Episcopal Church. Another Christian doctor is needed for the staff.

Guanajuato is a city of 60,000, the capital of the state of the same name. It is located 160 miles northwest of Mexico City. It stands at an altitude of 6,500 feet in a rich silver-mining region. The Mexican Central Railroad passes through the city.

One year's report of the hospital staff shows 339 visits to homes, 4,579 consultations, 24,523 treatments, 52 major and 279 minor surgical operations, medicines furnished 17,587 patients. Fifteen different nationalities were included among those who were treated.

For this internship a man is required who has had a thorough medical education and who is prepared to make his professional knowledge and skill directly subservient to the furtherance of the gospel.

Communications may be addressed to the director of the hospital, Dr. Levi B. Salmans, Good Samaritan Hospital, Guanajuato, Mexico.

TRAINED NURSES FOR CEYLON, TURKEY AND INDIA

Five trained nurses are needed at once in Christian hospitals in Turkey, India and Ceylon, respectively. The work is essentially religious and Christian, and requires women who are in full sympathy with its missionary purpose. While denominational questions are not raised, membership in some Protestant church is expected. Women who have administrative capacity and a gift for training other women in nursing, will find a large opportunity for work that is greatly needed. •

The Hospital for Women and Children at Madura, South India, needs a nurse. Last year 519 patients were treated in the hospital; 14,771 in the dispensary; 1,067 of these were Mohammedans, 9,296 Hindus, 4,851 native Christians and 76 Europeans. Sixty-two operations were performed, 139 maternity cases cared for, 438 outside visits made, 40,390 prescriptions written. This work was carried on under the supervision of two physicians. There has never been an efficient American nurse connected with the hospital. In order that native workers may be properly trained, a well-equipped trained nurse is urgently needed now. The Madura Mission is all within the limits of the Madura district of the Madras Presidency and includes a population of 2,573,000 people. Tamil is the language of most of the native people.

The McLeod Hospital, Inuvil, Ceylon, needs one nurse to have entire charge of a training school for nurses and the organization of the nurses' staff of the hospital. This is one of the best hospitals in India and is in

charge of Dr. Isabel N. Curr. The work is practically self-supporting. Last year 1,142 patients were treated in the hospital and 3,205 in the dispensary.

The total population of Ceylon, an island which has about the area of West Virginia, is 3,592,397, largely made up of Buddhists, Hindus and Mohammedans. Five missionary physicians with three missionary hospitals and seven dispensaries constitute the Christian medical assistance available to all these people. Inuvil is in the northern part of the Island in a district the population of which is 177,971. The temperature is fairly equable, the rainfall light.

In the Ceylon Mission of the American Board there are six stations and twenty-three out-stations. Thirteen missionaries carry on medical, educational and evangelical work. Twenty churches with over 2,000 members have been organized. Seventy-five Sunday schools have a membership of 3,976 students.

Anatolia Hospital, at Marsovan, Asiatic Turkey, affiliated with Anatolia College. A new building is under construction, which, when completed, will be one of the finest in Turkey. The hospital staff consists of three doctors, two foreign nurses, one dispenser, a nurses' training class and a force of twenty-five servants and helpers. In 1911 there were 852 in-patients (610 surgical, 242 medical); 3,690 new patients in clinic (804 operations). Of these, 367 were Armenians, 279 Turks, 176 Greeks. Marsovan is one of the stations in the Western Turkey Mission, of the American Board. To meet the needs of not less than 11,000,000 people, there are only seven hospitals and dispensaries.

The Hospital at Talas, Cesarea (Asia Minor), needs a nurse, to be associated with Miss Phelps. Last year 10,000 cases were treated. Talas is also in the Western Turkey Mission.

Azariah Smith Hospital, at Aintab, in the Central Turkey Mission, needs a nurse to be associated with Miss Bewer. This is one of the greatest missionary hospital plants in the world. One year over 46,000 cases were treated. The hospital is connected with the Central Turkey College and has a staff of eight workers. In 1911, ward patients to the number of 223 were treated; 353 major and 500 minor operations performed; 40,445 dispensary treatments given. There are forty-two beds and two cribs in the hospital.

The Central Turkey Mission is serving these 1,586,000 people. Six stations and fifty-two out-stations have been established with a total force of thirty-five workers. Thirty-five churches have been organized with a membership of 6,542. Twenty-eight Sunday schools have a membership of 12,164. Reinforcements are urgently required.

The missionary hospital has introduced the profession of nursing to women in the East. The conservatism of Turkey has stood in the way of direct approach, on the part of male physicians at least, to the women of the country. The government has prevented the sending in of women physicians. The tremendous need of training native nurses presents a remarkable opportunity for service. The need in India is no less urgent and important where social customs and caste isolate the women from uplifting influences and medical attention.

The widespread influence of these hospitals is indicated by the fact that in Turkey the patients attending the mission hospitals have come from 1,200 different towns and villages, in many of which the Gospel has never been preached. There are many cases where the patient, returning, has reported his experience in the hospital in a way to arouse permanent interest.

All appointments are to be made by the American Board of Commissioners for Foreign Missions, which provides traveling expenses and living quarters in addition to the regular missionary salary.

Inquiries may be addressed to Mr. Wilbert B. Smith, 125 East 27th Street, New York City.

A SUGGESTION — TEMPORARY QUARANTINE

PARIS, ILL., Dec. 28, 1912.

To the Editor:—May I offer a suggestion to physicians and health boards in Illinois? The contagious sore throats are becoming most vexatious to diagnosticians, especially in certain localities. In Paris, we have been passing through a most baffling epidemic of tonsillitis. In the majority of cases the Klebs-Loeffler bacillus is absent. The streptococcus is often absent. Some of these throats contain no bacteria outside a few mouth germs. When the epithelial cells are pushed off, a stubby diplobacillus may often be found in their cytoplasm; but it may be said that the bacteriological examinations are often unsatisfactory. In the severe forms the disease may resemble diphtheria and the bedside diagnosis is, therefore, rarely conclusive.

These sore throats are usually highly contagious; and while usually mild, have often been severe and even fatal even though other members of the same family quickly recovered. In some cases unjust quarantines have apparently been imposed, while by others freed from restraint, the disease has been spread. This community (and indeed several others, so I have been told) has been "worked up" over the matter, and much censure has been placed on the heads of physicians who have attempted to handle them conscientiously.

I would propose that while we attempt to diagnosticate these cases as accurately as possible, that in view of our lack of precise knowledge we impose a temporary quarantine on each suspicious case of sore throat, and that this be removed after the disease has run its course, the throat has been sprayed with antiseptic solutions and the sick room has been sterilized (providing bacteriological examinations do not show the presence of the diphtheria bacillus, in such case the quarantine should be extended).

The following wording for these quarantine cards is suggested:

Temporary Quarantine SUSPICIOUS TONSILLITIS Probably Contagious

Yours truly,

B. G. R. WILLIAMS.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY

The regular meeting of the Adams County Medical Society was held December 9 at Quincy, Ill., when the annual election of officers was held, after which Dr. H. T. Duffield of Pittsfield, secretary of the Pike County Medical Society, read an interesting paper on the subject, "How to Resuscitate the New Born Child." The session was harmonious and the election seemed to please all the members present, and resulted as follows: president, Ray Mercer, Loraine; first vice-president, Kirk Shawgo; second vice-president, C. R. Bates; secretary, Elizabeth Ball; treasurer, C. F. Ericson; board of trustees, C. D. Center; board of censors, J. H. Blomer; delegate, R. J. Christie, all of Quincy.

The board of trustees now consists of Drs. Center, Ericson and Pittman; the board of censors of Drs. D. M. Knapp, F. T. Brenner and J. H. Blomer. Dr. C. A. Wells was appointed as chairman of the committee for the promotion of the medical department at the state university.

BOND AND MONTGOMERY COUNTIES

Forty-four physicians from Bond and Montgomery counties devoured 65 quails at a dinner given by Dr. W. A. Allen at his beautiful country home at Donnellson on the evening of November 21. The physicians who attended from Bond County were: Drs. B. F. Coop, W. T. Easley, A. M. Keith, E. S. Clark and J. C. Wilson of Greenville; O. C. Church of Woburn; Drs. D. T. Brown, E. A. Glasgow and J. S. Poindexter of Mulberry Grove and J. D. Chittum of Sorento, and the remainder from Montgomery County. Not a physician came behind a horse, all came in automobiles, some from Nokomis, a distance of thirty miles, to attend the dinner.

Dr. Allen gave a personal reminiscence of his recent trip around the world, and Dr. Nicholson of St. Louis told of his experiences in practicing in English, German and French Hospitals, he having recently returned from a trip abroad.

The banquet was suggested as an annual event for the Montgomery society, which held an election of officers at the dinner.

CLARK COUNTY

Society met in Dr. Wilhoit's office at 2 p. m., Dec. 12, 1912. Members present, S. C. Bradley, Rowland, Bruce, Johnson, Boyd, Wilhoit, Weir and Lewis. Dr. Doak was a visitor.

Minutes of previous meeting were read and approved.

Dr. R. B. Boyd read the paper of the meeting on "Diseases of the Lungs," discussing bronchopneumonia in detail, etiology, symptomatology, pathology and treatment. He then took up lobar pneumonia in the same manner. Many important points were made on this very timely subject. In the discussion, Dr. Bruce can see but little change in treatment in the past forty years; that anti-inflammatory treatment is proper at first, later, supporting medicines.

Dr. Johnson treats all pneumonia as an infection. Thinks later a serum will be found. At present, he uses sodium salicylate, citing rheumatism treatment as analogous.

Weir spoke of the many grades of bronchopneumonia, ranging from the small and few spots of lung affected producing almost no symptoms to the most desperate cases, where large parts of both lungs are consolidated. Sees some good in all the different methods of treatment, purging and other eliminants, depres-

sants, veratrum, aconite, etc., expectorants, mur. ammonia especially; stimulants, strychnin, digitalis, etc., each treatment to be used in proper cases and in the stage of the disease when it is indicated but deplores the fact that the mortality is about the same now as years ago, though much progress has been made in the treatment of other diseases.

Dr. Doak considers heart failure the usual cause of death in fatal cases. Uses phlebotomy, later stimulants, eliminants, etc.

Bradley stated that much has been learned from the homeopaths in pneumonia and typhoid fever. Both diseases cure themselves if nothing prevents the natural course. He watches the heart; uses atropin in some cases; puts patient on porch to get fresh air, the better in some desperate cases; employs cotton jacket.

Bruce further said he gives quinin, 10 or 15 grains, at once in precongessive stage, or aconite, if congestion is present; late in disease quinin, strychnin and calcium at times 1/10 grain till effect is obtained.

Lewis uses cold sponge for high fever, aspyrin instead of sal. sodium on account of less nausea from it.

Doak has had suppression of urine when using sod. sal. Other members had had no such effect.

From the observations, experiences and opinions presented, one was able to glean many valuable points, helpful in the management and treatment of this very frequent and fatal class of diseases.

Several cases of very high fever were reported and discussed.

Society adjourned.

L. J. WEIR, Secretary.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting, Oct. 16, 1912

A regular meeting of the Chicago Medical Society was held, Oct. 16, 1912, with Dr. Wm. M. Thompson, president of the North Side Branch, in the chair. The program consisted in a symposium on medicolegal topics, as follows:

1. "Why is a Medical Expert?" James J. Barbour, Esq.
2. "The Physician in the Probate Court." Hon. C. S. Cutting, Judge of the Probate Court.
3. "The Physician in the Criminal Court." Hon. Harry Olson, Chief Justice Municipal Court.
4. "Hospital Liability." A. J. Pfann Esq., Attorney at Law.

DISCUSSION

Dr. O. W. Lewke: In connection with the statement by Judge Olson as to kleptomanias and the committing of the crime during the menstrual period, it may interest you to know that in my experience in the coroner's office, I found that over 70 per cent. of women committing suicide did so during the menstrual period.

Regular Meeting, Oct. 23, 1912

A joint meeting was held with the Mississippi Valley Medical Association, Oct. 23, 1912, with Dr. Jos. M. Patten in the chair, Dr. Frank being ill. After calling the meeting to order, Dr. Patten introduced Dr. Louis Frank, president of the Mississippi Valley Medical Association, and he presided during the remainder of the meeting. The program consisted in the following addresses:

1. Address. Dr. Louis Frank, Louisville, Ky.
 2. Address in Medicine. The Stomach from the Standpoint of the General Practitioner, the Specialist and the Surgeon. Dr. Charles G. Stoekton, Buffalo, N. Y.
 3. Address in Surgery. Biologic Interpretation of Abdominal Pain and Its Surgical Relation. Dr. Geo. W. Crile, Cleveland.
- No discussion.

Regular Meeting, Oct. 30, 1912

A regular meeting of the Chicago Medical Society was held, Oct. 30, 1912, with the president, Dr. Jacob Frank, in the chair. The program follows:

1. Epilepsy—Surgical Treatment. A. Augustus O'Neill.
2. Goiter (by invitation). Charles H. Mayo, Rochester, Minn.
3. Present Status of the Surgical Pathology of Goiter (by invitation). William Carpenter McCarthy, Rochester, Minn.

Regular Meeting, Nov. 6, 1912

A regular meeting of the Chicago Medical Society was held Nov. 6, 1912, with the president, Dr. Jacob Frank, in the chair. The program follows:

1. Pulmotor Demonstration. Commonwealth Edison Company.
2. Inhalation Treatment: A New Apparatus. Homer M. Thomas.
3. Tonsillectomy by the Sluder Method. Arthur M. Corwin.

*ENGLEWOOD BRANCH CHICAGO MEDICAL SOCIETY**Regular Meeting, Dec. 3, 1912*

Another dose of bad weather was handed to us on the evening of our last meeting. Notwithstanding, however, over fifty were present. Those who came were well repaid, for the meeting proved to be full of instruction and highly entertaining. For over an hour Dr. George H. Simmons entertained his audience with a most interesting paper on "What the American Medical Association is Doing." His paper was so pregnant with facts and positive statements of vital interest to all medical men that it will be impossible to give a complete report. Of the things the A. M. A. has accomplished Dr. Simmons believes that the work on medical education is perhaps the most important. He stated that up to 1901 it was not known how many medical colleges there were in the United States, that there were too many and some of very poor standing. In the spring of 1901 the first Educational Number of the *Journal* came out, publishing the list of colleges and their graduates. In 1903 efforts were directed toward gathering State Board matter and in 1904 the first State Board Number was published. Also at this time, 1904, the Council on Medical Education was created and inspection of colleges systematically done. When the council was formed there were 166 colleges as compared to 116 now. There has also been a marked decrease in the number of students. One is appalled at the statement that there are now twenty states who cannot refuse to recognize any medical college diploma. The work of obtaining information of graduation, etc., of all doctors was undertaken with the result that now the A. M. A. possesses a card index system giving full information of every graduate since 1875. The work done along this line has had a powerful influence on medical education and has stimulated State Boards to better methods.

The Council on Pharmacy and Chemistry founded seven years ago has resulted in marked changes in patent medicine write ups in various medical journals. Doctor's testimonials were common seven years ago. There is a card index of testimonials of over 10,000 doctors, the filing of which took considerable time in the past but now the average addition is about one weekly. Work has been and is being done on the study of the action of drugs with a view of obtaining definite facts; also on scientific research work on various diseases as Rocky Mountain fever, etc. The work done by the Council on Pharmacy and Chemistry has had a wholesome effect upon the manufacturer and the patent medicine propaganda has had a most beneficial effect on the layman. The exposition of the various patent medicine frauds has been so thorough and the proofs so positive that not one of those exposed has ever filed suit. Almost all of the matter published by various lay publications exposing frauds has been furnished or been obtained as the direct result of the work of the A. M. A.

The Council on Health and Public Instruction is doing a vast amount of good along the lines of preventive medicine; for example the work done regarding blindness resulting from ophthalmia neonatorum. Bulletins on various subjects are sent weekly to over 4,000 newspapers.

Dr. Arthur J. Cramp showed many interesting stereopticon pictures. These pictures are of great educational value, very instructive and were immensely enjoyed. Only a few can be mentioned. Papine, advertised as a preparation to take the place of opium with various fancy claims, was proved to be a solution containing an eighth of a grain of morphin to the dram.

Nature's Creation, advertised as a blood-medicine, their adv. begging poor sufferers not to take potash and mercury but to use nature's harmless remedy, was proved to be a solution containing K. I. This was later advertised as a consumption cure. Their glowing testimonials of how so and so had been cured lost their value when the next picture shows the official death certificate of the individual who gave the testimonial. A striking and pathetic lesson.

The fake concerns advertising as treating all letters as strictly confidential were shown to be utterly devoid of any sense of honor when they sold these "strictly confidential" letters at from \$5.00 to \$20.00 per thousand.

Fake chemical analyses were shown up, it being proved that for a certain amount fakes can have a chemical analysis to their liking.

Many cartoons relating to public health instruction were shown.

A. G. BOSLER.

CRAWFORD COUNTY

The Crawford County Medical Society met to-day in regular session in the Carnegie Library at 2 p. m., Nov. 14, 1912. The meeting was called to order by the president and the minutes of the preceding meeting were read and adopted. The following members were present: Drs. Firebaugh, Dunham, T. N. Rafferty, Voorheis, Newlin, Price, Kirk, Wilson, Henry, Mitchell, Carlisle, H. N. Rafferty and Lowe.

The Board of Censors reported favorably upon the application of Dr. G. F. Smith of West York to become a member of the Crawford County Medical Society. It was moved, seconded and carried that the report of the Board of Censors be received by the society. After some discussion by the members it was moved and seconded that the vote on the report of the Board of Censors be reconsidered, carried. It was then moved and seconded that the application of Dr. Smith be laid on the table pending further investigation by the Board of Censors; carried.

The scientific program was then taken up. Dr. Davis was absent and had not left his paper with the secretary. Dr. Wilson read a very able and interesting paper, "Intestinal Diseases Among Children," bringing out many valuable and salient points. Moved, seconded and carried that the paper be received by the society for discussion. The discussion was led by Dr. Voorheis, followed by a general discussion of the paper by the various members of the society. Various methods were next discussed for reviving the interest of the members in the society. The plan of holding meetings occasionally in other towns in the county was adopted for trial. Moved, seconded and carried that the next meeting of the society be held in Oblong. Moved, seconded and carried that the sum of \$10.00 be paid the janitor of the Carnegie Library for services rendered. Upon motion duly seconded and carried the society adjourned.

A. LYMAN LOWE, Secretary.

EFFINGHAM COUNTY

The annual meeting of the Effingham County Medical Society was held in the city hall of Effingham, December 10. After a short and instructive address by the retiring president, Dr. E. W. Brooks, the following officers were elected for 1913: president, Dr. D. H. Taphorn, Effingham; first vice-president, Dr. E. A. Bing, Altamont; second vice-president, Dr. S. C. Lorton, Shumway; secretary, Dr. L. C.

Bassett, Effingham; treasurer, Dr. George Haumesser, Shumway; delegate, Dr. F. Buckmaster, Effingham; alternate, Dr. E. W. Brooks, Beecher City; censors, 3 years, Dr. C. F. Burkhardt, Effingham; 2 years, Dr. F. W. Goodell, Effingham; 1 year, Dr. Geo. Haumesser, Shumway; medico-legal, Dr. E. W. Brooks, Beecher City.

The meeting was harmonious, well attended and enthusiastic. Owing to lack of time the unfinished part of the program was continued to the next regular monthly meeting, Jan. 14, 1913.

FULTON COUNTY

The 62d annual reunion of the Fulton County Medical Society was held Tuesday, December 3d. Those present from out of town were: president, C. D. Snively, Ipava; secretary, D. S. Ray, Cuba; Drs. Jennie Parks of Cuba, P. H. Stoops of Ipava, G. S. Betts of Banner and E. O. Onion of Summum.

The program included three papers as follows: "Rheumatism of Childhood," Dr. E. O. Onion, Summum; "Follicular Tonsillitis," Dr. P. H. Stoops, Ipava; "Diabetes Mellitus, with a Clinic Presenting Surgical Complications," Dr. H. H. Rogers, Canton.

In the evening under the auspices of the society, Dr. Frank Allport, consulting physician of the Chicago board of education, delivered an address on "School Hygiene."

GREENE COUNTY

The annual meeting of the Greene County Medical Society was held in Roodhouse, Friday, Dec. 13, 1912. Meeting was called to order in the city hall at 11:30 a. m. by the president, F. H. Russell. Members present: Drs. F. H. Russell, Eldred; Howard Burns, Carrollton; L. O. Frech, W. C. Day, G. W. Burns, H. W. Chapman, F. N. McLaren, E. K. Shirley and H. A. Chapin, White Hall; E. H. Higbee, C. R. Thomas and H. W. Smith, Roodhouse.

Minutes of the previous meeting were read and approved. A letter from the president of the state society, Dr. Nickerson, was read, in which he suggested the appointment of a committee on membership in an endeavor to increase the membership of the local societies and state society, to make the Illinois State Society the largest in the association. On motion of Dr. Howard Burns the censors were appointed as special committee on membership.

The following officers were elected for the ensuing year: Howard Burns, president; E. K. Shirley, first vice-president; C. R. Thomas, second vice-president; H. A. Chapin, secretary and treasurer; censors, E. H. Higbee, J. J. Ehresmann and H. W. Smith. Adjourned for dinner at 12:30.

Called to order at 1:30 by the president. The first paper on the program was by Dr. H. W. Chapman, subject, "Labyrinthitis." The paper was especially well prepared and suggested greater care in the diagnosis and treatment of those cases. Dr. F. N. McLaren read a most excellent paper on "Arteriosclerosis." Both papers brought forth interesting discussion by the members present.

The following resolution was adopted:

Resolved, That the Greene County Medical Society unanimously petition the governor to consider the recommendations of the Illinois State Medical Society in the appointment of a new State Board of Health.

The censors reported White Hall as the next place of meeting, Friday, March 14, 1913. Essayists, Dr. Howard Burns, "Therapeutics of Iodin;" E. K. Shirley, "Management of Obstetrics in Country Practice;" C. R. Thomas, "Early Diagnosis of Pulmonary Tuberculosis." Meeting adjourned.

H. A. CHAPIN, Secretary.

IROQUOIS-FORD COUNTY

The regular quarterly meeting of the Iroquois-Ford Medical Society was held in Gilman, Illinois, Dec. 3, 1912, at the New Gilman Hotel. A very interesting and instructive program was presented.

Dr. J. Y. Shamel of Gibson City read a very interesting paper on "Injuries to the Hand." He took up in detail the minor injuries met in ordinary practice, featured the use of appropriate splints in sprains and dislocations and indicated in a clear and intelligent manner the modern treatment of septic conditions by the use of sera and vaccines. Dr. Shamel's paper deserved a lively discussion, but this was waived as a number of the members were compelled to leave early and there were a number of papers on the program.

Dr. S. R. Walker of Chebanse cited a case of an extensive burn, which overthrew the idea that 50 per cent. of the body surface cannot be burned without a fatal outcome. Dr. Walker treated this case with picric acid solution and had a complete recovery. He brought out the fact that the toxic effect of picric acid had been overestimated, as practically the whole body of this patient was swathed in bandages soaked with the solution.

Prentiss McKenzie, connected with the scientific department of H. K. Mulford & Co., of Philadelphia, read an interesting paper on the "Natural and Artificial Immunity." The essayist illustrated the lecture with lantern slides, showing the details of manufacturing all of the curative sera and bacterins. The paper was particularly pertinent as more interest is being taken at present in serum and vaccine therapy than in any other development in medicine. The bibliography on vaccine and serums is meager, and the house of H. K. Mulford is to be congratulated on its willingness to cooperate with the medical bodies in disseminating exact knowledge regarding these newer additions to the physician's armamentarium.

At the conclusion of the program the following officers were elected for the ensuing year: President, Dr. Hester, Paxton; vice-president, Dr. N. T. Stevens, Clifton; secretary-treasurer, Dr. J. L. Shawl, Onarga.

R. E. McKENZIE, President.

MADISON COUNTY

The annual meeting of the Madison County Medical Society was held in Alton, Dec. 6, 1912, and was, without doubt, enjoyed by all members present as much, if not more, than any meeting which has yet been held by the society. We received a most agreeable surprise in the talk made by Dr. Wm. Engelbach, of St. Louis. On the program it was stated that he would read a paper on the heart and its diseases. The doctor, however, appeared before the society without a note or paper of any kind and lectured for an hour and a half on the heart. All agree that this was one of the best lectures which we have heard and was even better than some of those which were delivered to us when we were in the medical schools. A unanimous vote of thanks was tendered to Dr. Engelbach for his instructive address. The election of officers for the ensuing year resulted as follows: President, Dr. Mather Pfeifferberger; vice-president, Dr. E. A. Cook; secretary, Dr. E. W. Fiegenbaum; treasurer, Dr. R. S. Barnsback; state delegate, Dr. Lay G. Burroughs; alternate, Dr. W. H. C. Smith; medico-legal committee member, Dr. R. D. Luster; board of censors, Dr. J. B. Hastings, Dr. J. Morgan Sims and Dr. F. E. Tulley. Next meeting will be held in Granite City, in January, in joint meeting with the Madison County Press Club.

E. W. FIEGENBAUM, Secretary.

MERCER COUNTY

At the meeting of November 19th Dr. Chauncey Sherrick, in his paper on "Anesthesia," reports the following conclusions:

1. The use of chloroform as the anesthetic for major and minor operations is no longer justifiable, except perhaps, in some alcoholic or other difficult subject.

2. As regards ether, the two points to be especially emphasized are that anesthesia should always be induced quickly, and throughout its duration should be as uniform as possible, as I believe that intervals of irregularity or incomplete anesthesia play a part as great, or even greater, than profound narcosis does in producing fatalities under ether anesthesia.

3. While nitrous oxid appears to afford the least injuries of all forms of anesthesia, it is also unfortunately the most expensive, and the skill required in its administration limits its use to large hospitals.

4. The day when anesthesia was supposed to require nothing more than a bottle of ether or chloroform, and a towel or some simple mask, is rapidly passing. In my judgment safety in anesthesia lies, in a large measure, in the recognition of the anesthetist as a specialist. Encouragement should be given in every city to a certain man or men to devote all or the greater portion of their time to the giving of anesthetics.

5th. It should be recognized that the welfare of the patient demands skill on the part of the anesthetist no less than that of the surgeon.

M'HENRY COUNTY

The McHenry County Medical Society held its regular meeting in the city hall at Woodstock, Ill., Friday afternoon, November 24. Dr. C. W. Barrett of Chicago was present and gave an interesting paper on a surgical subject; this was well illustrated by lantern slides. Present, Drs. J. I. Wernham and Curtis of Marengo; Dr. Brown of Hebron, Dr. Schmidt of Harvard, Dr. Stattler of Huntley, Drs. Windmuller, Smith, Seelye, Baccus, Francis and West of Woodstock.

MORGAN COUNTY

A meeting of the Morgan County Medical Society was held December 12, when an election of officers was held and other business transacted. The election follows: president, Dr. F. A. Norris; vice-president, Dr. E. F. Leonard; secretary, Dr. George Stacy; treasurer, Dr. A. L. Adams; librarian, Dr. C. E. Black; censor for three years, Dr. E. F. Baker; censor for one year to fill out the unexpired term of Dr. H. C. Campbell, Dr. D. E. Reid.

L. W. Chambers presented the society with a framed copy of a bill presented by D. O. Wallace in 1826 to Mr. Chambers' uncle, Roland Chambers. The bill showed that seventeen calls had been made, together with the date and the medicine given at each call. The calls were made in February and March, and the entire expense was \$22.50, the same being settled for \$20. The copy was in Latin and showed the marks of almost a century.

NORTH CENTRAL ILLINOIS MEDICAL SOCIETY

The thirty-ninth annual meeting of the North Central Illinois Medical Society, held at Pontiac, December 5, was one of the best meetings in the history of the society. LaSalle was chosen as the meeting place for 1913. The officers selected were: president, Ezra T. Goble, Earlville; first vice-president, C. C. Hunt, Dixon; second vice-president, C. D. Thomas, Peoria; secretary-treasurer, George A. Dicus, Streator; board of censors, A. B. Middleton, Pontiac; F. A. Guthrie, LaSalle; J. C. White, Seatonville; K. Hartnaek, Newark, and C. A. E. LaSage, Dixon.

This medical society takes in the counties of Lee, Livingston, Bureau, Putnam, Whiteside, LaSalle, Ogle, DeKalb, Kendall, Marshall and Grundy, the total membership being between 500 and 600. The society was organized forty years ago. Dr. W. O. Ensign of Rutland, still a very active member, was one of the founders.

OGLE COUNTY

The regular meeting of the Ogle County Medical Society was held October 16 in the supervisor's room of the court house, Oregon, Ill., at 1 o'clock. The meeting was called to order by the president Dr. H. D. Houston, and the minutes of the previous meeting were read by the secretary and adopted. Roll call found the following members present: Drs. Akin, Beveridge, Beebe, Griffin, Hedberg, Johnston, Kretsinger, Shaw, Sheets and Schreiber. Visiting guests present: Drs. W. L. Kareher, of Freeport; B. A. Cottlow, of Oregon; E. L. Hendricks, Lanark; Hammett, Stillman Valley; R. McPherson, Hazelhurst; L. A. Nickerson, Quincy; S. C. Thomson, Byron; J. B. Roe, Oregon; T. H. Culhane, Rockford, and A. H. Wales, Lanark.

Literary program: Dr. L. H. A. Nickerson, of Quincy, president of the Illinois State Medical Society, read an interesting paper on "Headaches." The doctor took up most common forms of headaches. The subject was ably discussed by Drs. Wales, Hendricks, Roe, Kareher and Beveridge.

The next paper was presented by Dr. T. H. Culhane, of Rockford, on the subject of "Vaccine Therapy." This paper was well presented, was of a scholarly and scientific nature and was well received. The discussion was led by Dr. Kareher of Freeport. The doctor in a lengthy discussion advocated vaccine therapy, but not to the extent of a cure-all in all diseases, and he doubted very much if its field of usefulness would meet with a glowing success. The paper was further discussed by Drs. Nickerson, Beveridge, McPherson, Griffin, Hendricks, Wales and Shaw, Dr. Culhane to close. Dr. Nickerson gave a short talk on "Organization." The doctor is very enthusiastic in this work, and is making a strenuous effort to put Illinois in the lead of membership to state societies.

Motion made and carried, that the president appoint a committee of three on organization. Drs. Griffin, Beveridge and Akin were appointed on the committee.

Applications for membership were made by Drs. J. B. Roe and B. A. Shaw. After being approved by board of censors both were elected to membership.

A motion was made that owing to the uncertain conditions of the weather in February, we postpone our meeting until the third Wednesday in April, 1913. Carried.

On motion of Dr. Beveridge a vote of thanks was given to Drs. Culhane and Nickerson for their able papers; also thanks were given to visiting guests. Adjourned to meet in regular session the third Wednesday in April, 1913.

ROCK ISLAND COUNTY

The officers of this county society have sent out the following statement of the advantage of membership in the society and the state medical society, together with the program for the meeting which was held Tuesday, December 10, and consisted of the following:

County society membership confers, without additional cost: Social intercourse with 79 per cent. of the county's eligible practitioners. Refreshing discussions of live topics. Lectures from visiting men of high caliber. Unlimited draft, when needed, on the state society's defense fund. ILLINOIS MEDICAL JOURNAL, one of the best journals which comes to your desk. If your dues are unpaid please remit now. This will be the last meeting of the calendar year.

Program: "Short Report of Rockefeller Institute and Clinical Congress of Surgeons of North America," Dr. E. M. Sala, Rock Island; "The Influence of Suggestion on Treatment," Dr. F. H. Short, Rock Island; "Dystopic Kidney," Dr. S. C. Plummer, Chicago.

Rock Island County Medical Society met in regular session at New Harper Hotel, Dec. 10, 1912, with President Sargent in the chair. Present, members, Miller, Moore, Craig, Asay, Lowe, Johnson, Donahoe, Ostrom, First, Sargent, Chapman, Lachner, Souders, Bennett, Long, Snively, Sala, De Silva, Norman, Wright, Williams, Eyster, Eddy, Foster, Mueller, Seids, Dondanville—27. Visitors, Fairchild, Littig, Plummer, Bradford—4. October meeting minutes read and approved. Report of organization committee heard and accepted.

Ballots on applications of Drs. F. J. Otis, and Alfred Tremblay resulted favorably in each instance, Drs. Lachner and Bennett serving as tellers. Ballot on transfer application of Dr. H. A. Beam was unanimous and the name ordered placed on our roster. Dr. Eyster made request of members for information concerning early medical history of Rock Island County. Application of Dr. E. H. Stone of Watertown was presented and Drs. Johnson, Donahoo, and Chapman appointed as committee to investigate. Drs. Sala and Bennett were appointed committee to draw up resolutions concerning the death of Dr. W. O. Beam. Dr. F. B. Clarke's resignation as second vice-president was heard and accepted, Dr. Clarke having removed from the county. Resolutions bearing reference to an Illinois medical school were adopted and Drs. Ostrom and First appointed as committee to work up the matter. Druggists' committee (Rock Island County Retail Druggists' Association), Gentlemen, Brunstrom and Walker, were entertained and a committee, Drs. First, Bennett, and Johnson, was appointed to confer with them regarding advisability of and plans for a "Get-together" meeting. Malpractice suit against Dr. W. H. Ludewig was referred to by Dr. Sala, and secretary instructed to communicate with Dr. Ludewig and with the Illinois Medical Society regarding defense. Bills allowed: Julius Staach & Sons, \$5.00 (flowers, Beam funeral); Stanley Printing Concern, \$2.25; Manufacturers' Hotel Co., \$22.25; East Moline *Herald*, \$1.25.

Clinical cases reported by Drs. Ostrom and Dondanville, the first, a hemophilic attack, treated with diphtheria antitoxin in the absence of any other blood-serum preparation; and the second showing an immense fibro-osseous specimen of rapid growth following injury to periosteum and muscle tissue. Dr. Ostrom demonstrated a most highly creditable instrument devised by himself for the tying by shot ligation of blood-vessels in difficult locations—notably tonsillar. The papers of Drs. Sala, First and Plummer constituted the main program of the evening. Each showed the kind of effort and interest that go to make society meetings worth while. Dr. Sala gave an excellent account of a visit to Rockefeller Institute and attendance at clinical congress of surgeons of North America. Dr. First laid open the subject, "The Influence of Suggestion on Treatment," with an individuality which showed work and an understanding of practical therapeutic application. The discourse of Dr. S. C. Plummer of Chicago was absolutely good, and was one which, in point of instructiveness, is easily desirable for societies of wider range. Dr. Plummer is of the opinion that we will hear more concerning "Dystopic Kidney." Discussion was participated in by Drs. Eyster, Sala, Littig, Fairchild and Sargent. Dr. Plummer was tendered a deserved rising vote of thanks. Adjournment taken until February.

W. D. CHAPMAN, Secretary.

SALINE COUNTY

After being practically dissolved for the past four years, the Saline County Medical Association was reorganized at an enthusiastic meeting of physicians and surgeons held at Harrisburg, December 10. The first meeting was in the office of Dr. A. J. Buttner and was later transferred to the office of Dr. J. V. Capel. The large attendance was very encouraging to the surgeons and the association will henceforth glide along successfully.

The following officers were elected: president, M. D. Impson, Brushy; first vice-president, John C. Hicks, Eldorado; second vice-president, J. V. Capel, Harrisburg; secretary-treasurer, E. W. Cummins, Harrisburg.

The following standing committees were also selected: program, Drs. C. W. Turner, John C. Hicks and R. B. Nyberg; by-laws, Drs. Thos. A. Jones, W. J. Blackard and H. L. Thompson; printing, Drs. J. R. Baker, O. N. Gibson and F. L. Ozment; reception, Drs. J. V. Capel, R. G. Bond and B. L. Garriss; fees, Drs. F. M. Robinson, F. M. Hart, O. N. Gibson, D. A. Lehman and Aud. Garrison; censors, Drs. W. S. Swan, Aud. Garrison and R. L. Kane.

The next meeting of the association will be held on Wednesday, Jan. 15, 1913, at which time all members are requested to be present.

SANGAMON COUNTY

The semi-monthly meeting of the Sangamon County Medical Society was held Monday, November 25, at Springfield, and consisted of a clinic by Dr. E. Wyllis Andrews of Chicago, at St. Johns Hospital, and a banquet in the evening at the St. Nicholas Hotel at which Dr. Andrews told of the new operation for emphysema. Dr. Andrews gave a description of the Freund operation for this disease, which consisted of exsection of the costal cartilage of four ribs on one side.

*** VERMILION COUNTY**

The annual dinner and business meeting of the Vermilion County Medical Society was held Monday, Dec. 9, 1912, at the Plaza Hotel, Danville, Ill. Immediately following the conclusion of the dinner the gentlemen retired to the Council Chamber of the City Hall where the business session was held. The feature of the meeting was the address of the retiring president, Dr. L. B. Russell, of Hoopeston, who talked most interestingly of the forward movement in medicine and surgery, and the progress made by the local society and the profession in general.

A set of resolutions was adopted in which endorsement was given the proposition before the state legislature to establish a Department of Medicine at the University of Illinois.

The election of officers for the coming year resulted as follows: president, Dr. Frank M. Mason, Rossville; vice-president, Dr. H. F. Dice, Ridgefarm; secretary-treasurer, Dr. Solomon Jones, Danville; censor, Dr. O. H. Crist, Danville; delegate, Dr. Solomon Jones, Danville; alternate delegate, Dr. L. B. Russell, Hoopeston.

Retiring vice-president Dr. F. W. Barton escorted the president-elect, Dr. Mason, to the chair, where he delivered a brief address, after which the meeting adjourned.

NEWS OF THE STATE

NEWS ITEMS

—The Graham Hospital, of Canton, according to reports, will soon be self-sustaining.

—Dr. George J. Spencer and Dr. Francis Conroy, of Chicago, have opened up offices at Sterling, Ill.

—Dr. William Patch, formerly a practitioner of Coleta, was recently committed to hospital at Watertown.

—Dr. John L. Shaw, formerly of Martinton, Ill., recently of Chicago, was convicted in Judge Burke's court on a charge of bigamy.

—Dr. W. D. Fowler, of Cooperstown, shot and seriously wounded Samuel Bradbury. Bradbury is said to have sent threatening letters to Dr. Fowler.

—Dr. R. D. Luster, of Granite City, deputy coroner of Madison County, is seeking appointment as a member of the State Board of Health, under the new Governor.

—The sum of \$5,000 has been appropriated by the Kane County Board of Supervisors for the purchase of ground and buildings to be used as a tuberculosis sanitarium. The site of the sanitarium is between St. Charles and Geneva.

—Dr. W. E. Clay, of Mt. Carroll, being a close bidder for the position of county physician of Carroll County, was given the job; his bid this year was \$150, last year he received \$99 for his services. Drs. Rhine-dollar and Rice each had a bid in for \$200.

—Dr. George W. Bradley, of Waverly, aged 80 years, was placed in the Morgan County jail accused of the attempted murder of Frank Wyle, a jeweler of that city. Dr. Bradley shot the jeweler for alienating the affections of his wife. Mrs. Bradley is thirty years younger than her husband.

—Dr. Hugh H. Atkinson, who says he practiced for a time at Woodlawn, Ill., was recently arrested at St. Louis for begging on the streets, and in an interview with a *Post Dispatch* reporter, states that his fall from prosperity and a \$6,000 year practice was caused by the use of morphin.

—Dr. Lewis H. Behrens, of Westminster Place, St. Louis, recently elected president of the St. Louis Medical Society, was born 44 years ago at Gillespie, Ill., attended school at that place and Shurtleff College at Upper Alton, graduated in pharmacy and medicine at St. Louis and is one of the best known physicians in that city.

—Dr. H. W. Powers has resigned his position as Medical Superintendent of the Kenilworth Sanitarium, Kenilworth, Ill., to engage in general practice in Wilmette, Ill. The position made vacant at the Kenilworth Sanitarium by Dr. Powers' resignation has been filled by the

appointment of Dr. Sherman Brown, formerly Assistant Physician of the Kings Park State Hospital at Kings Park, Long Island, New York.

—Dr. C. C. Hunt, of Dixon, after almost fifty years of practice, forty-five of which were in Dixon, has retired from his medical work and moved to Seattle, Wash. In his new home Dr. Hunt expects to pay attention to the loan and abstract business and solicits correspondence from his old friends in Illinois who have money to loan at a good rate of interest. We call attention to his advertisement in another column.

—Dr. Grace Jerger, who states that she has been a member of the Illinois State Medical Society, but for several years has been living at Waterloo, Ia., placed her application for membership in the Blackhawk County Medical Society of that state, where it was tabled. She has appealed her case to the judicial council stating her belief that the only reason for which she is denied membership in the local society is her association with her husband, Dr. J. A. Jerger, who is not a member of the local society, and has been conducting a private hospital in Waterloo.

—Greene Vardiman Black, M.D., D.D.S., dean of the Northwestern University Dental School, has been awarded the Miller Prize of the International Dental Federation, established by subscription from twenty-six different countries of the world. The prize is a gold medal weighing about sixteen ounces, and was delivered in person by Floristan Aguilar, of Madrid. It was awarded to Dr. Black in recognition of his original work and discoveries in many branches of dental science. Dean Black has long been known as the most distinguished exponent of dental art in the world, and this unique honor is conferred by his colleagues in several countries of the world, and will serve as a capstone of the numerous distinctions conferred on him in the last few years. Dean Black is the father of Dr. C. E. Black, of Jacksonville, and Dr. Arthur D. Black of the Northwestern Dental School, Chicago.

—The Decatur Medical Society met at Decatur, in the Citizen's Title & Trust Company Building, November 26. The subject of the discussion at the meeting was "Acute Anterior Poliomyelitis, or Infantile Paralysis." Dr. R. L. Morris presented a report on the subject citing as an example the case of his own child who was recently afflicted with the disease. Dr. C. Martin Wood also presented a case. The subject of "Contract Work in the Practice of Medicine and its Results" was discussed by Dr. O. Wilhelmy, who for several years was a physician at La Place, and went from there to Salida, Col., where he had contracted to buy the practice of a contracting physician in that place, but found the business to be worthless. He cited illustrations from his own experience. A special business meeting was held after the discussions, for the purpose of making changes in the by-laws of the society.

PERSONALS

Dr. Edward A. Fischkin desires to announce his return from Europe.

Dr. Julius Grinker, of 32 North State Street, has returned from Europe.

Dr. J. Morgan Sims, of Collinsville, was elected Coroner of Madison County.

Dr. O. J. Gwynn, of Granite City, has sold out and removed to New York City.

Dr. John Hrabik will open up an office for the practice of medicine at Murphysboro, Ill.

Dr. Arnold Reagan, of Canton, has bought out Dr. Carl Turner, of Brereton, and will locate there.

Dr. H. C. Parker, of Freeport, has opened an office at Pecatonica, where he will practice his profession.

Dr. R. D. Luster, of Granite City, has been appointed Deputy Coroner of Madison County at a salary of \$600 a year.

Dr. C. C. Ellis has been transferred from the Peoria State Hospital to the Chicago State Hospital at Dunning, Ill.

Dr. George Parmenter, of Bellmont, has removed to Johnson, Ind., where he will take up the practice of his profession.

Dr. H. M. Dally, of Pontiac, Ill., is in a hospital in Chicago, where he underwent an operation for cancer of the stomach.

Dr. J. B. Shawgo, a prominent physician of Quincy, was declared of unsound mind and taken to the State Hospital at Jacksonville.

Dr. William Major, the newly elected county physician of Peoria County, will retain Dr. C. E. Scullin as assistant county physician.

Dr. D. Dennison Kirby has opened up offices in the Jefferson Building, Peoria, Ill. His practice will be limited to genito-urinary diseases.

Dr. Robert H. Rae, of the medical staff of the Chicago State Hospital at Dunning, has been appointed to take the place of Dr. F. B. Clark, resigned.

Dr. Wm. R. Smith, recently from Roundup, Mont., has located in Granite City, having bought the office and fixtures of Dr. Gwynn. Dr. Smith formerly lived and practiced in Alton.

Dr. F. B. Clark has resigned his position as acting superintendent of the Chicago State Hospital, and has accepted a position on the staff of the Sacred Heart Sanitarium, Milwaukee, Wis.

Dr. A. J. Markley, of Belvidere, is at Mercy Hospital, Chicago, where he will undergo an examination to determine the exact nature of an ailment with which he has been suffering for some time.

Dr. W. A. Haskell's yacht, Onatoga, was rammed by a mussel barge during a fog on the Illinois River, near Kampsville. The doctor and his guests were badly shaken up, but not otherwise injured.

Dr. William A. Halbert, of 1027 W. Washington Street, Springfield, Ill., has moved to Chicago, where he will enter on the practice of medicine with his brother-in-law, Dr. John B. Miller of that city.

Drs. Black and Weis visited Peoria November 24 and conferred with Drs. Bacon and Collins and Mr. Evans, secretary of the association of commerce, as to arrangements for the coming meeting of the state society.

Dr. William H. Ludewig, who is retiring from active medical practice after twenty-five years of continuous practice in Rock Island, and who is preparing to move to Foley, Ala., was the guest of honor at a dinner

given him at the New Harper Hotel, December 3, by the physicians of Rock Island.

Dr. Charles W. Hall, of Kewanee, who has been practicing in that city for twenty-five years, and has been active in county and state society work, has accepted a position as assistant to the chief surgeon of the Chicago, Milwaukee and St. Paul Railroad, and will locate in Seattle, Wash. Dr. Hall was also interested in military affairs, and for many years was captain of the local military company.

INJURIES TO DOCTORS

Dr. Barbee, of Sidney, Ill., was injured in a runaway at that place, being badly shaken up and bruised.

Dr. T. C. Hayes, of Canton, injured his foot by accidentally tipping over an engine leaning against the wall in a garage, where he had driven his car.

Dr. Mabel Blake Phelps, of Danville, was nearly asphyxiated by gas at her home. The fortunate arrival and quick action of her husband saved the physician from death.

Dr. E. Deichman, of Keyesport, Ill., was seriously injured in a runaway, when the horse he was driving became frightened at an automobile, overturned the buggy and threw the doctor out; he sustained a broken collar bone and other injuries.

Dr. L. J. Hammers, of Lexington, was seriously injured when the steering gear of his car broke, plunged into a ditch and turned over on him, pinning him fast until a passerby discovered his predicament and released him. His back was badly wrenched besides other cuts and bruises.

REMOVALS

Dr. O. J. Ruth has removed from Tolono to Colchester.

Dr. R. J. Stiver has removed from Lena, Ill., to Freeport.

Dr. T. W. Ashley has removed from Springfield, Ill., to Newark, O.

Dr. Maupin, of Dwight, Ill., has removed to Salt Lake City, Utah.

Dr. R. Lacey Eddington, has removed from Springerton to Bement.

Dr. N. B. Ackley has removed from Colchester to Big Sandy, Mont.

Dr. J. W. Robinson has removed from New Berlin to Springfield, Ill.

Dr. George A. Licrly has removed from Beverly, Adams County, Ill., to New Berlin.

Dr. R. O. Broadway has removed from Odin to Penfield where he has purchased the practice of Dr. J. W. Moreland.

Dr. G. M. Illingsworth, of 810 W. North Avenue, Chicago, Ill., has removed to 919 Arme Avenue, Los Angeles, Cal.

PUBLIC HEALTH

—Dr. George T. Palmer, of Springfield, addressed a meeting which was given under the auspices of the Livingston County Anti-Tuberculosis Society and the Federation Clubs, at Pontiac recently. He delivered a strong plea for a fight against typhoid fever and tuberculosis.

—Dr. William E. Quine, of Chicago, addressed a meeting which was given under the auspices of the Winnebago County Anti-Tuberculosis Society, November 27, at Rockford. A business session was also held and the following officers were elected to serve three years: Dr. Daniel Lichty, Dr. M. R. Harned, Dr. Anna Weld, Dr. W. H. Fitch, Dr. J. E. Tuite, H. S. Hicks, Miss Julia Gulliver, Miss Mary I. Beatty and W. H. Gaffney. The directors have decided to affiliate with the state anti-tuberculosis society.

—At a meeting held in Chicago, December 3, the Illinois State Association for the Prevention of Tuberculosis elected the following officers: president, Dr. W. A. Evans, Chicago; vice-presidents, Drs. O. T. Hardesty, Jacksonville, and Geo. T. Palmer, Springfield; treasurer, David R. Forgan, Chicago; attorney, Chas. L. Allen, Chicago; members of central committee, Dr. Theodore B. Sachs, Chicago, and Mr. Louis C. Coleman, Springfield. A plea for a sanitarium for the care of colored tuberculosis patients was made by Dr. Wm. G. Alexander, of Evanston.

—The annual meeting of the Livingston County Anti-Tuberculosis Society held its meeting Tuesday, November 26, in the office of Dr. A. B. Middleton at Pontiac. The following officers were elected for the ensuing year: president, Dr. P. A. Pyper, Pontiac; vice-president, Mrs. Isaac Walton, Fairbury; secretary, Mrs. F. J. Spaulding, Pontiac; treasurer, C. R. Tombaugh, Pontiac. A committee composed of business men appeared before the Livingston County Board of Supervisors during its summer session with a proposition for the erection of an addition to the county house for the exclusive use of tuberculosis patients. The Board of Supervisors referred the matter to a committee and it is expected that during the coming year favorable action will be taken regarding the proposition. The treasurer's report showed receipts for the past year \$305.91, with expenditures of \$107.10, leaving a balance on hand of \$198.81. The Red Cross Christmas seals, which is the principal means employed by the society in raising funds, have been placed on sale.

MARRIAGES

E. CAULDWELL, M.D., of Joliet, to Miss Kathryn Smollen, of Lemont, November 28.

GRAMBOW THOMSEN VON COLDITZ, M.D., to Miss Ruth Ware, both of Chicago, December 3.

JOSEPH C. FRIEDMAN, M.D., to Miss Beatrice Shaffner, both of Chicago, November 12.

CALVIN EDGAR BROWN, M.D., to Miss Leila Haerther, both of Chicago, December 6.

J. V. STEVENS, M.D., of Chicago, to Miss Isabel Strawser, of Janesville, Wis., on November 1.

H. H. TUTTLE, M.D., of Springfield, to Miss Mae L. Suddick, of Joliet, December 15, 1912, at Ottawa, Ill.

W. E. COULTER, M.D., of Seneca, was united in marriage November 22 to Miss Edith Pennecwill, of Washington, Ill.

DEATHS

JOHN H. STEIN, M.D., St. Louis Medical College, 1876; for twenty years a practitioner of Mackinaw, Ill., died December 10, aged 62 years.

JOSEPH W. KITTEN, M.D., Jenner Medical College, 1906; died at his home in Chicago, November 2, from pneumonia; aged 44.

CELESTIA D. MESSENGER, M.D., of Brooklyn, N. Y., formerly of Chicago, died very suddenly of lung trouble at that place, December 2, 1912.

THOMAS WESLEY SHASTID, M.D., of Pittsfield, died December 6, 1912, at the Augustana Hospital, Chicago, Ill., aged 80 years. Death was the result of abscess of the hip and complications.

C. B. WESTBROOK, M.D., a practitioner near Eldorado, Ill., until eight years ago, died at the home of his daughter at Murphysboro, Ill., December 6, 1912, aged 73 years, 6 months and 23 days.

MERCHANT CHARLES FARGO, M.D., Rush Medical College, Chicago, 1912; intern in the House of Correction Hospital; died November 26, from shock, two days after an operation for hernia; aged 27.

HERBERT W. MOOREHOUSE, M.D., chief surgeon of the Wabash System for the last thirty years, died at his home in Danville, Ill., December 21, 1912; aged 70 years. Death was caused by cancer of the esophagus.

WILLIAM CAMPBELL (license years of practice, Illinois, 1878); for many years a practitioner of Equality, Ill.; died at the home of his son in Danville, Ill., November 20, from accidental strangulation; aged 70.

HARRY MILTON FERGUSON, M.D., Rush Medical College, 1890; of Morris, Ill.; a member of the American Medical Association and secretary of the Grundy County (Ill.) Medical Society; died November 19, from rheumatism; aged 43.

SIMON S. WILCOX (license years of practice, Illinois, 1877); a veteran of the Civil War; for half a century a practitioner of Hutton Township, Vermilion County; died in the Soldier's Home, Danville, Ill., November 27, from senile debility; aged 87.

ABRAHAM FOX, M.D., of Danville, died at St. Elizabeth's Hospital, November 28, from acute nephritis, following an operation for hernia; aged 52 years. Members of the Vermilion County Medical Society, of which he was a member, attended the funeral in a body.

WILLIAM DAVID HUMPHREY, M.D., of Virginia, died December 4 after five weeks of suffering from injuries received in a runaway accident. He was born in Jacksonville, January 3, 1865. He was a graduate of the Jacksonville High School, Illinois College and Northwestern University, Chicago, and had been practicing in Virginia since 1887. His wife and one son survive.

WILLIAM G. MAGUIRE, M.D., aged 99, father of twenty-three children and married three times, died at his home in Tuscola, November 29. He was born in Estelle County, Kentucky, August 4, 1813, and was a practicing physician for twelve years, but not being licensed, received only \$1.75 for services in that period. He owned the first kerosene lamp in Douglas County, and persons from miles around flocked to see the extraordinary light it gave; oil at that time was 60 cents a gallon.

THOMAS M. BUTLER, M.D., of Rockford, Ill., died at his home in that city November 28, of paralysis, aged 80 years. He was born in Lycoming County, Pennsylvania, June 21, 1833. After attending the common schools he continued his studies at Bloomsburg academy and Lewisburg University, and graduated from Cincinnati Medical College in 1857. Dr. Butler was a member of the A. W. Rawson Lodge of Masons, and also of the Knights Templars, serving ten years as prelate.

WILLIAM M. GROSS, M.D., an old and prominent physician of Gillespie, Ill., died at his home in that city December 18, 1912, aged 70 years. He was born March 24, 1842, in Bollinger County, Mo. In 1866 he began the study of medicine at Walshville, Montgomery County, Ill., under Dr. M. S. Davenport; five years later went to Keokuk, Ia., where he completed the prescribed course, and in 1875 graduated from the College of Physicians and Surgeons; he then practiced in the village of Hornsby till he moved to Gillespie, where he resided until his death.

ALICE B. STOCKHAM, M.D., at one time a practitioner in Chicago, died at Los Angeles, Calif., December 3, 1912. Dr. Stockham graduated at the Eclectic College in Cincinnati, 1854, and took another degree from the Chicago Homeopathic College. She held peculiar views on the social purity problem, and took up with the new thought movement, which spread over the country in the 80's; she wrote a pamphlet which caused her arrest and conviction for the misuse of the mails. Broken by the shock of the experience she is said to have crept from the field and retired to California, where her death occurred.

Book Notice

THE PRINCIPLES OF HYGIENE. A Practical Manual for Students, Physicians and Health Officers. By D. H. Bergey, A.M., M.D. Assistant Professor of Bacteriology, University of Pennsylvania. Illustrated. Third edition, revised and enlarged. Octavo of 555 pages. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$3.00 net.

Although this book is a third edition, it may almost be considered as new, so numerous are the changes introduced. Indeed, hygiene is making such strides that four years are sufficient to transform many of its fundamental features. We note in the present volume a considerable extension of the subjects of sewage purification, the mode of transmission of various diseases—plague, malaria, yellow fever, etc.—the defensive functions of the body and the means to enhance them, bacterial therapy and prophylaxis, etc. The wide scope covered by the work gives it great value not only for the practicing physician and the hygienist and sanitary officer, but also for sanitary engineers and architects. To all these we can heartily recommend Dr. Bergey's book.

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No. 2

ORIGINAL ARTICLES

GOITER*

CHARLES H. MAYO, M.D.

ROCHESTER, MINN.

The development and structure of the body have always been a most interesting study and it has become a most fascinating one since our advancing knowledge of the former "wonder glands" of the body shows that they are the real architects and builders and that they control many of the most important functions of the body. When this knowledge was first acquired, to each gland was attributed an exact and sole duty, but it is now known that the functions of these glands, especially those of the ductless group, are intimately correlated. They each have a great preponderance of control over certain functions, causing typical disease when one is deranged or absent, and atypical disease when a derangement in function of possibly two or more of the associated glands occurs. All of the animals are supplied with these controlling bodies in some form and, while the substance of the gland remains the same in character, the location and presence of the capsule varies somewhat.

In the human being the thyroid is of utmost importance, and the first bud of its development can be seen in the human embryo of 4 mm. Formerly supposed to develop from three anlagen, it is now known to be wholly formed from the median one, originating between the three divisions of the tongue, from which point it descends in the neck to its resting place astride the anterior upper trachea. It consists of two lateral lobes and an isthmus. Anomalies are caused by failure of the gland to develop, by its continuing its fetal form as permanent structure, by failure to leave its original location (as lingual thyroid), by portions breaking off in the descent (attached or completely carried away), thus causing accessory or aberrant thyroid, or the rather common occurrence of becoming entangled in the developing hyoid bone,

* Read before the Chicago Medical Society, Oct. 31, 1912.

stringing out a portion of the gland known as the pyramidal lobe. Sometimes, though rarely, pharyngeal embryonic mucosa is drawn down in the line of descent causing the so-called thyroglossal duct cyst. Because of the disappearance of the thyroglossal duct which occurs in the early development in the human being it was believed that this gland in some less developed animal life delivered through a duct, like the submaxillary gland, and, while long looked for, was finally found by Gaskell. In his search for the highest form of development in invertebrate animals he shows that this surface delivery does occur in some of them such as the limulus, sea scorpion, king crab, ammocetes, et al. As has been suggested by MacCarty, the best place for the further study of this gland is in this type of animal, although singularly enough in them it delivers into the genital tract. The next advance in our knowledge will come through finding the animal invertebrate or vertebrate in which the duct disappears.

We can readily see that the structure of this gland is most important when we consider that its blood supply arises from approximately the same sources as the vessels supplying the circle of Willis, and that its vascular area is the same as that for the brain. Under certain conditions of thyroid activity the vessels supplying it enlarge considerably. The secretion of the gland is in the nature of an iodo-thyroglobulin.

The mother's thyroid undoubtedly influences the growth of the child in utero. A babe without functioning thyroid at birth appears normal and the failure of this function requires several months to make itself manifest. When thyroid is fed to those deficient of it through birth, operation or disease, it improves their condition. We can more readily understand its relation as an associated sex gland in the higher animals and human beings from the genital tract position of the thyroid in the higher invertebrates. This is noticeable in the goiters of adolescence and lesser enlargements which are so common at puberty when the ovaries and uterus take on development, in the slight increase in size through congestion preceding menstruation which is so often noted, in the frequent thyroid symptoms during the early months of pregnancy due to extra demands upon its secretion, and in the symptoms of varying hyper- and hypo-function seen at the menopause. Again we not infrequently see a lessened catamenia with an increase in weight and sterility between the ages of 25 and 40, which is often apparently due to a decreased activity of the thyroid. In such cases thyroid feeding at times seems to improve their condition.

It may be said that these statements are but clinical observations. They do, however, offer a most inviting field for investigation in order that we may be supplied with more accurate knowledge.

In the human being the gland weighs from one to one and one-half ounces. There is, however, a large factor of safety provided in all of these structures which would indicate that a portion of the gland, stated as probably one-sixth, would be sufficient to furnish the necessary secretion. There is a wide variation in the structure of the ductless glands, due to failure to completely develop, and to various forms of degen-

eration which occur after development has been completed, without sickness or symptoms. According to Lorand the deferring of old age requires the continued presence of some of the thyroid throughout life. The cretin is the child without thyroid from birth. The loss of thyroid in the adult causes myxedema.

It can be readily recognized then that transplantation of the gland from similar beings has become a fruitful field of experimentation. Previous to the antiseptic period transplantations of all sorts were almost impossible, but, through antiseptic and aseptic detail, skin, bone and conveying structures, such as nerves, have been transplanted. More recently, through better technic, blood-vessels and glands also have been transplanted. Such transplants seem to fulfil their purpose, although the original tissue may no longer exist, but has formed a framework for tissues which permit of a "near-function." In transplanting glands it is at once realized that we are dealing with the highest type of tissue, the next thing to brain substance. They have a function not unlike the brain, only they transmit their influence by wireless hormones instead of nerves, and while the temporary effect may be marvelous through the hormones of this secretion its permanency is rarely seen, its benefits lasting only a short time after the disappearance of the structure through phagocytic activity or true degeneration. Usually a necrosis of the center occurs—a degeneration which gradually spreads to the periphery of the transplanted gland. Naturally we would expect but temporary relief in transplanting from one animal to another or to a human being in whom there is a leaking of the blood.

Concerning the etiology of goiter much has been written, but there is little as yet which seems positive; the most commonly accepted theory is that it is a water-borne irritant which acts on the gland. In our own country patients come from every state with every possible differing water-supply and surroundings, as well as elevation.

It is impossible in the human being to describe just what constitutes a strictly "normal" thyroid; there are conditions of the gland which must nearly approach it and wide variations from it which apparently give no symptoms. It is evident that an increased secretion of the gland occurring with increased parenchyma must often be neutralized in the body, as symptoms do not always manifest themselves until some shock or break in the equilibrium of the nervous system renders the condition apparent. It is also evident that less thyroid seems to be necessary in advancing years.

It would appear that the disease is on the increase according to the increasing number of operations that are being made for goiter. It must be remembered, however, that many of these patients have had the goiters from ten to twenty years, so the percentage of operation is greater now than it will be a few years hence. Over 1,000 operations for goiter were made at St. Mary's Hospital during the past ten months.

While the thyroid gland is subject to frequent diseases which increase its size, only a small percentage of such enlargements are malignant.

Most of them are so-called simple goiters and conform to the normal outline of the gland. Others, however, appear as a rounded tumor growth or as an irregularly developed tumor consisting of an adenoma or of adenomas.

The goiter of adolescence is an edematous condition of the gland due to watery colloid. This type often disappears with or without treatment and seldom requires operation. Iodin is very effective in these cases.

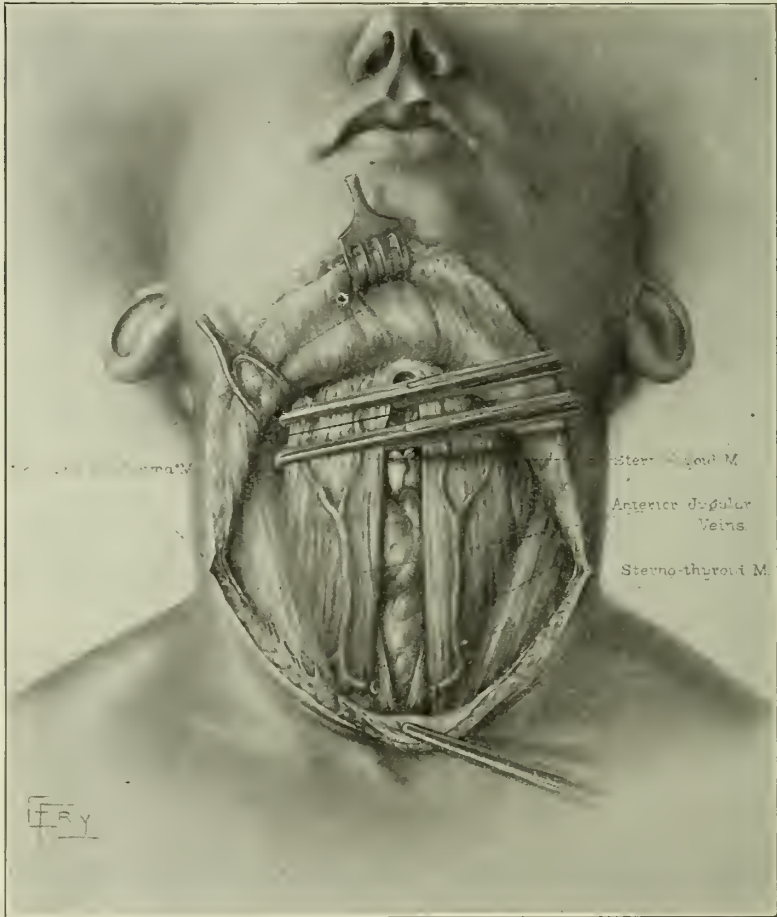


Figure 1

Simple goiter and adenoma through degeneration coming from natural causes or induced by the stimulation of iodine in long-standing goiters may produce the symptoms of a toxemia with attendant effects on the heart, kidneys and liver. These cases may have all the nervous symptoms and heart complications of a bad case of Basedow's disease without the protruding eyes. Operations on them are fully as serious as in the ordinary case of Graves' disease.

Exophthalmic goiter or hyperthyroidism are terms which have been applied to a disease which is recognized by a group of varying symptoms which have been described for the past 150 years, at first as Morgagni's disease, then Parry's disease, Moebius' disease, later Graves' and then Basedow's. It was not until 1885, when Moebius attributed the condition to a derangement of function of the thyroid gland, that a true advance in knowledge was made. As is shown in the pathology of the thyroid some

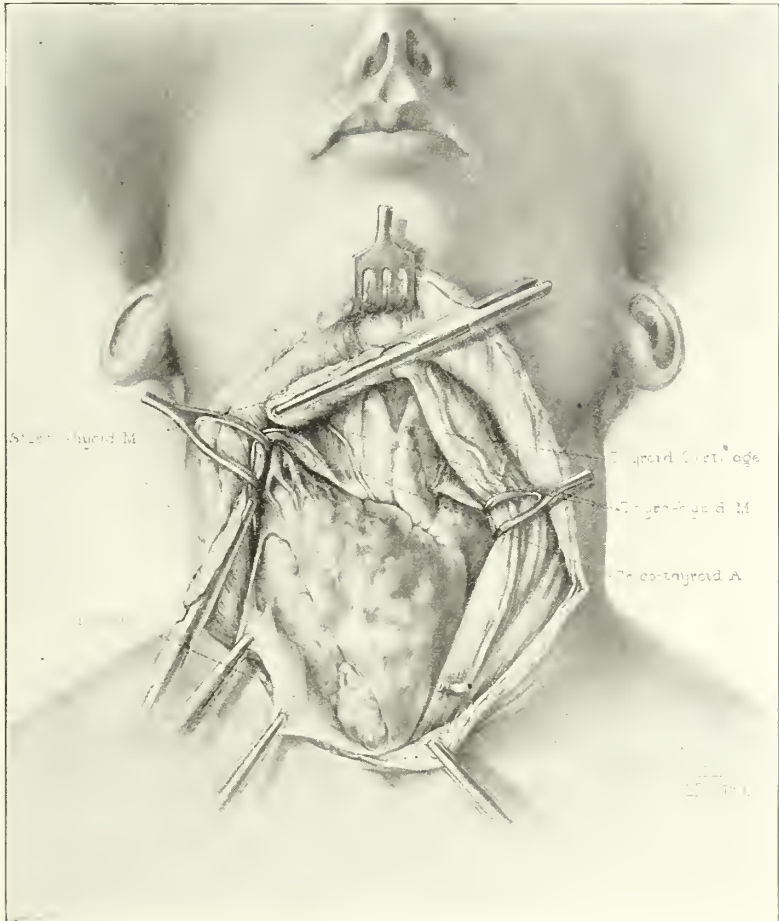


Figure 2

cases present a general increase in the parenchyma, while in others it is in scattered areas. There is a variation in the nervous system of the individual effected by the hyperactivity of the gland, so one may look for all degrees and stages of this chronic disease which has now, however, become quite generally accepted throughout the world as amenable to surgical treatment.

There is no question but that Graves' disease is a chronic malady and only occasionally runs an acute course to termination. According to

Plummer's observations there seems to be a period of ascent during the first few months before the heart dilates. After this occurs the patient continues in a serious condition until about the end of the first year. During the second year the case can be classed as a chronic one subject to fluctuations. Possibly the most critical period is the few months following the first dilatation of the heart. While the large majority of cases can be easily diagnosed from the nervous symptoms,

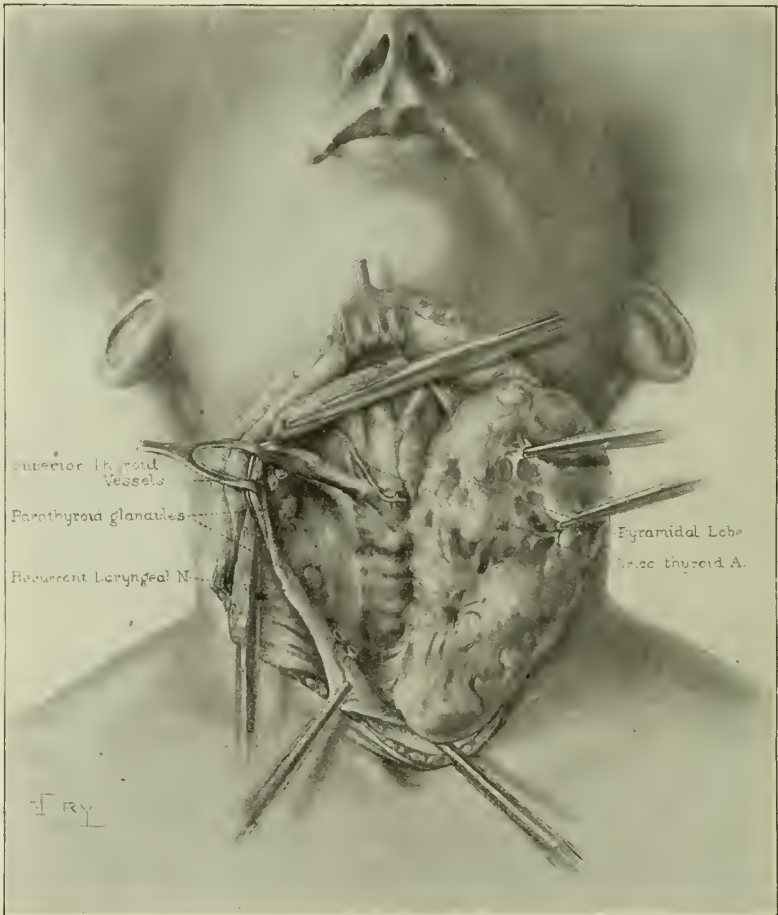


Figure 3

tachycardia, goiter and eye symptoms, there are a few cases in which it is difficult to diagnose true hyperthyroidism from pure neurasthenia, myocarditis or Bright's disease, as well as a few cases in which there may be a complication by affection of the hypophysis, thymus or adrenals. These cases are not relieved by operation on the thyroid. Rehn, of Frankfurt, believes that the most serious cases are complicated by thymus disease as well. In them he removes this structure if present.

We have made it a practice not to treat the serious cases as subjects for emergent surgery, but tide them through these temporary exacerbat-ions. In the most severe cases we ligate the superior blood-supply, sometimes in two stages, and later do a thyroidectomy. The average gain in weight of this group after ligation is 22 pounds during the first four months. A thyroidectomy then becomes a very safe procedure.



Figure 4

The anesthetic of choice is ether for general surgical operations. It works very well in simple goiters and also in the majority of cases of hyperthyroidism. By reason of complications, disease of the kidneys, heart or lungs, tracheal pressure or high blood-pressure, a local anesthetic may be indicated. In some cases it is advisable to secure the benefits of

combined anesthesia by the injection of $\frac{1}{2}$ per cent. novocain followed by a light general anesthetic. In using ether it is advisable to give the patient $\frac{1}{120}$ of a grain of atropin and a small quantity of morphin one hour before the operation. The atropin keeps the pharynx and trachea dry. In very severe cases of hyperthyroidism the giving of $\frac{1}{200}$ of a grain of scopolamin with $\frac{1}{8}$ grain of morphin does much to quiet the apprehensiveness of the individual.

Operation: In ligating the blood-supply of the gland the vessels of the superior group are chosen because of their accessibility. The inferior thyroid vessels are usually ligated in cases where a serious relapse occurs between the ligation of the superior vessels and the proposed thyroidec-tomy. The transverse incision across the center of the thyroid cartilage is employed for ligation of the superior vessels, as here there is freedom from the possibility of nerve injury. The anterior border of the sternomastoid muscle is exposed and drawn outward, clearing the outer edge of the omohyoid, which is drawn inward. This brings into view the upper pole of the thyroid gland. The ligature is placed at the pole or slightly on the gland. This prevents the reversal of circulation in one of the large branches of anastomosis with the inferior which occurs when the vessel is ligated higher up. One or both sides are ligated at the same time according to the conditions and the necessities of the case.

Extirpation of the gland or resection is made by a transverse incision, passing from one external jugular vein to the other in a natural skin crease low in the neck. The skin and platysma muscle are lifted upward as a single flap, exposing the general outline of the gland, which is now brought into view by dividing vertically between the sternohyoid and thyroid muscles. (Fig. 1.) The true capsule of the gland is recognized as the one containing the blood-vessels; false or fibrous capsules do not have them. (Fig. 2.) Usually the lobe to be removed can be elevated between these muscles as they are stretched, but in large goiters and in exophthalmic goiters it becomes necessary to cut the muscles on the one side, rarely on both. They should be cut between two forceps which are placed near the upper part of the muscle, nearly to the top of the skin dissection, as this procedure preserves the body of the muscle with its nerve-supply and breaks the line of penetrating muscle-moved scar so disfiguring after some operations. The lobe to be removed is now elevated and its vessels caught and cut between forceps, many being applied, as all vessels do not need ligating and often several can be caught in one ligature. (Fig. 3.) This method seems preferable to the immediate application of double ligatures unless the number of forceps which it is necessary to use becomes a hindrance. The high division of muscle gives ready access to the superior thyroid artery which, after being divided, permits of the rotation of the lobe across the trachea, where it is usually separated at the merging of the isthmus into the left lobe unless it is desired also to remove part of the lobe. In very large goiters causing tracheal pressure it is often advisable to divide the left sternohyoids as well as to free the trachea by dividing the isthmus, the central portion of the gland being removed by turning the lobes outward. This operation

is somewhat more bloody, but quite safe as the trachea is exposed early. Catgut is efficient suture material. Silk is less pleasant to handle. (Fig. 4.)

Tubular drainage is employed for twenty-four hours, except in large substernal goiters, when the drain is removed within a few hours in order that the organization of the early blood clot may occur to aid the primary closure of the large cavity.

To prevent the possibility of tetany the epithelial or parathyroid glands must be avoided in the course of an operation and preserved even if it be necessary to replace accidentally separated ones. These bodies, four in number (two on each side), are known to be occasionally injured by hemorrhages into them at birth, so it is impossible to say whether or not the parathyroid bodies are all present and whether or not the one or two that we may injure are the only ones existing. It is advisable therefore to keep in front of the posterior capsule or very close to it in extirpating the diseased portion of the thyroid gland and not to remove any small gland-like structures.

However, those surgeons whose patients have had tetany following operations for goiter have probably removed the lateral lobes of the thyroid and left an isolated bit of the isthmus without blood-supply. Even if the parathyroids were not removed their circulation had been destroyed. Those cases reported have usually recovered after a tedious convalescence and in spite of much experimentation.

The mortality in simple goiter is but a fraction of 1 per cent., while that of exophthalmic goiter varies from 1 to 2 per cent.

Relapses occasionally follow the removal of adenomas. They are also observed in some cases of Graves' disease due to an insufficient removal of gland or to an increase in what was left which may not show or cause symptoms for some years after the primary extirpation. The indications are to remove more of the gland.

DISCUSSION

Dr. Arthur Dean Bevan: We have cause for congratulation on having with us to-night the man who next to Kocher has done more in the last ten years to throw light on the clinical side of exophthalmic goiter than any one else. Dr. Mayo has had an unusual opportunity to study this subject both from the clinical as well as the pathologic side, and the work has been very thoroughly done.

So far as Dr. MacCarty's paper is concerned, it seems to me that his classification is rather complicated. I cannot criticise his paper because I have not devoted enough time to the study of the pathology of goiter, but he has shown the difficulty of making a classification even from the pathologic standpoint and of applying that classification to clinical work. I am rather inclined to the belief that clinicians must have something more simple than he has given us to-night.

Confronted with a clinical case it has always appeared to me that the questions that must be answered, in a case of enlargement of the thyroid, are as follows: Is it an enlargement, purely physiologic in character, such as we find in adolescence; is it a simple struma; is it an exophthalmic goiter, a goiter associated with symptoms of hyperthyroidism; or is it a malignant struma? If it is a simple struma, is it nodular and irregular or is it smooth and regular? Is it a fetal adenoma, or is it a colloid goiter or cyst? We must make a clinical classification because on that depends the treatment to be employed.

I can remember very well as a student of Moses Gunn and Charles T. Parkes how little was known of goiter twenty-five years ago. We were much interested in the work of William Warren Greene, the then professor of surgery in the University of Michigan, who performed the first operations for goiter that amounted to anything. He did them with few artery forceps, cutting out the goiter with one or two sweeps of the knife, and then came a scramble to ligate the vessels. In the first eight cases the mortality was exactly 50 per cent. To-day, thanks to the work of Kocher and Mayo, we can tell our patients that the operation in simple struma is attended by a mortality of less than 1 per cent. That, I think, is one of the triumphs of modern surgery.

In the simple physiologic enlargements of the thyroid, which occur so commonly in adolescence, we have at our command in the treatment very good agents, such as iodine, general hygiene, and time. They seldom demand operative intervention. In simple struma, iodine, in the great majority of cases in the adult, is the therapeutic agent that should be employed. Kocher believes that it will cure the majority of these cases. Of course, that means the ordinary diffuse struma, not a struma where pressure symptoms exist, where there is danger that with the increase of growth pressure symptoms will be serious. Where the enlargement is so great that it is a deformity we can safely tell the patient that the operation is the best method of treatment, and we can urge the patient to submit to an operation.

When you are dealing with the exophthalmic variety of thyroid, you are tackling a different problem. I believe, however, that medical men generally should be convinced of the fact that to-day surgical treatment gives better results in this variety than medical management. The results will, however, depend largely on the judgment and the skill and experience of the man handling the case. In brief, these facts must be recognized. The time has come when we should say to the patient, as we do in appendicitis, that early operation is the safest, before serious heart changes have taken place. In the minor cases ligation; in the more severe cases removal of the larger portion of the gland. In the more serious types of exophthalmic goiter, whenever the patient can walk around the block, whenever the heart is sufficient to enable him to walk a quarter of a mile, the patient is well enough to stand the effects of the operation of removal of a part of the gland.

The mistakes made are in those cases where the patient is not a good surgical risk for any operation, not alone thyroidectomy, partial or complete. There are many such cases, where we must trust to the opportunity of getting the patient on the wave of improvement. In these serious cases, the preliminary ligation is the operation that should be done; later, if possible, we may remove a part of the gland. The fatal cases are those where we try to do too much or where the patient is not in condition to warrant an operation. I would also like to emphasize the fact that there are patients whose condition is such that no operation at all should be undertaken. Some of these patients are in such shape that no matter what type of operation you perform, failure to cure is the inevitable result.

In the whole matter of exophthalmic goiter, so far as surgery is concerned, let us be honest with ourselves in reporting results. Cures by surgical means are relative. They are almost never perfect. In almost all of the cases there is some evidence of the disease remaining. That, however, does not in any way detract from the great benefits that are offered us by surgical means in these cases.

As far as carcinoma of the gland is concerned, I must admit that I have had very bad results in my cases. I am almost of the opinion that carcinoma of the thyroid is one of the least favorable conditions of carcinoma anywhere in the body for a radical cure. At the same time we must occasionally do an operation to give the patient relief, but most of these operations are palliative.

I cannot refrain from again expressing my great appreciation and interest in the two papers we have heard read to-night.

Dr. A. J. Ochsner: I am very glad to have heard these two papers. I will touch on but a few points. Dr. MacCarty and Dr. Wilson have given the patho-

logic side of this question a great impetus by their very careful and painstaking studies, and clinically we have been able to confirm all that they have observed during the past few years. They have done most valuable work, and I hope that they will continue in their efforts to throw light on this subject.

The protection of the recurrent laryngeal nerve, of which Dr. Mayo spoke, is of great importance. I have been impressed with the fact that a number of surgeons have almost no paralysis or partial paralysis of the recurrent laryngeal nerve, while other surgeons, some of the very best, have ten and fifteen, and one as high as 50 per cent. of disturbance of the recurrent laryngeal nerve. I have seen the work of several of these surgeons, and I am convinced that it is their attempt to protect this nerve that has caused the disturbance.

In several of these clinics the nerve is systematically exposed in order that it may not be injured. Dr. Mayo has advised to protect it by remaining in front of it, in front of the posterior capsule of the thyroid, and if you do this, you will have less than 1 per cent. of disturbance. It is absolutely unnecessary to expose this nerve. Of course, protecting the nerve in that way, also protects the parathyroid glands.

Another interesting fact has been brought out by Wilms, who for many years has made a careful study of the effect of water on the thyroid. It was demonstrated by Kocher that there are certain goiter wells, a fact which has been confirmed all over the world. Wilms' assistant, Bircher, demonstrated that in Switzerland the water which comes from soil composed of granite does not cause goiter, while the water which passes through earth which was at one time submarine will cause goiter. These soils may be a mile apart, as at Grindelwald. University students who come from goiter districts, during their stay in the university are very likely to develop symptoms of hyperthyroidism. A study of this condition has been made, and it was found that when these same students were sent back to their goiter water, they lost their exophthalmic symptoms.

The explanation has been worked out in this way, that the goiter is a compensatory physiologic product. In other words, the goiter water demands the production of more of the thyroid material or secretion; consequently the goiter is produced. When the student enters the university, where the water is free from this irritant, he has too much thyroid secretion, and he develops exophthalmic goiter.

Dr. Charles H. Mayo, closing: There are still many things to be learned about the thyroid. Dr. Bevan touched upon an important point when he said we must not operate on these patients with the expectation of cure when they are in the last stages of the disease. Operating on the goiter at this time will not cure atrophy, myocarditis, nephritis, etc., and it is because we have not paid enough attention to this point that our knowledge of the pathology of the thyroid has advanced slowly.

Dr. Ochsner has referred to the injury of the recurrent laryngeal nerve as occurring at times from too freely exposing it in endeavoring to protect it. I find that few surgeons make a routine practice of examining the vocal cords before operation. You will find quite a large percentage of people who have a paresis of an adductor or abductor on one side that is not at all noticeable in ordinary conversation. The voice may tire, and great effort may cause it to disappear entirely temporarily. Even after injury by operation the voice may return after three months for ordinary conversation. The other cord will come two-thirds across to meet it. If it be known before operation that paralysis exists, the patients should be told that they may lose their voice for a time. It is difficult to suture the recurrent laryngeal nerve after it has been cut. When operating on these cases it is important to see the nerve only when there is a tumor that runs underneath the trachea. Right sided round-ball tumors will as frequently produce paralysis of the left as the right nerve. The left nerve will not stand traction. It passes around the arch of the aorta and the posterior edges of the tracheal rings impinge on the nerve. Paralysis is more frequent on the left than on the right side.

Many of these patients consult a surgeon because of cosmetic reasons. They have a large symmetrical goiter and, if it be removed on one side, the neck will look as bad as before. In such cases a resection should be done, dividing the isthmus, removing the inner portion of each lobe, and building up two new lobes for a symmetrical neck.

Do not drain the large substernal goiters. Try and get the organization of the blood-clot. You can recognize these cases by the enlarged veins in the neck. The diagnosis can often be made without the Roentgen Ray. Usually they are of the adenoma type and are not serious cases to operate on.

In all the exophthalmic cases, there are periods of temporary improvement. Goiters may be arrested in all stages of their growth. Medical men should write on the cure of diseases of this gland because internists have not come together on the treatment of these cases for 150 years.

Dr. MacCarty, closing: I am very glad that Dr. Bevan said what he did. It allows me to say what I could not put into the paper. He said that my scheme is too complicated. It is in reality so simple that two high school girls, who have never studied medicine can readily classify goiters. The clinician has been making much more accurate diagnoses since he has been given descriptions of the conditions present. The clinical diagnoses are really pathologic diagnoses. We do not see the old fashioned diagnoses of simple goiter, exophthalmic and fetal adenoma. The scheme is not complicated. It is very simple and I am sure that if Dr. Bevan would study it for about twenty minutes, he would agree with me.

A PLEA FOR IMPROVED HYGIENE IN THE MANAGEMENT OF SURGICAL TUBERCULOSIS *

J. W. PETTIT, M.D.

Medical Director, Ottawa Tuberculosis Colony

OTTAWA, ILL.

While much yet remains to be done, we have made substantial progress as shown by the better education of the people, as to the nature, tuberculosis in this climate. At that time, tuberculosis was regarded as an incurable disease, or if curable, as only possible in certain favored climates. The work of the past eight years, in which I have been so generously supported by the medical profession, has enabled us to demonstrate the curability of tuberculosis in this climate, and by so doing, to a large measure, overcome that hopeless apathy, which has hitherto characterized our attitude towards this terrible scourge.

While much yet remains to be done, we have made substantial progress as shown by the better education of the people, as to the nature, causes, prevention and treatment of this disease. One of the tangible evidences of the marked change which has taken place in this comparatively short time, is the fact that every state touching our borders has one or more institutions for the treatment of tuberculosis, and that in our own state, several are already in existence, and preliminary steps are being taken for the erection of many more. In fact, every community almost is discussing more or less seriously the question of making institutional provision for the treatment of pulmonary tuberculosis.

* Read before the Chicago Surgical Society, Nov. 1, 1912.

I appear before you on this occasion to make a plea for an enlargement of our work and to secure, if possible, your cooperation by including in our field of operations what, I think all will agree, is an improvement in the treatment of the so-called surgical forms of tuberculosis.

Medical men, the world over, are in substantial accord as to the treatment of pulmonary tuberculosis. I have been impressed, however, for some time that the methods of treatment of surgical forms of this disease in this country and in Europe are radically different. In order to secure reliable information, I recently visited several European countries for the purpose of securing information as to their methods.

France was the first country in the world to attempt the treatment of tuberculosis in children by hygienic and dietetic methods. A detailed description of their methods is set forth in a recent article published in the *Chicago Medical Recorder*, entitled "The Marine Hospitals of France; A Visit to Berck," which I think all of you have received, or if not, I shall be pleased to place in your hands.

It will be noted by the article referred to, that in France great stress is laid on the beneficial effects of sea air, and by inference we are led to believe that this is absolutely necessary.

Probably the best institution in Switzerland for the treatment of surgical tuberculosis, is at Leysin, where they are equally successful at an altitude of 4,000 feet, and there the beneficial results are attributed wholly to the mountain air, altitude and sunshine.

In Germany they obtain equally good results in the open country away from the seashore and at a moderate altitude.

In England the results are equally good, practically at sea level, and in what is regarded as a rather unfavorable climate.

Thus we see that history is simply repeating itself. We are passing through the same experience in the evolution of the treatment of surgical tuberculosis as we have just passed through in the treatment of pulmonary tuberculosis.

In Europe, and especially in France and Switzerland, the treatment is almost wholly hygienic and dietetic. Comparatively little surgery is resorted to. It is unnecessary for me to call your attention to the fact that in this country operations are the rule and that hygienic and dietetic treatment is exceptional except as imperfectly carried out in the home and general hospitals. So far as I know, there is only one small institution in this country devoted exclusively to the treatment of surgical tuberculosis by the methods which are practiced in Europe. This is not because the surgeons of this country do not recognize the value of hygienic methods, but for the reason that they must accept the only means provided, which is the general hospital. My personal opinion is that the Europeans have relied on the hygienic treatment to the exclusion of operative procedures, and that the American surgeon, not from choice, but from necessity, has been compelled to largely restrict his management of these cases to purely surgical interference. This opinion is borne out by the later text-books on this subject.

In the last edition of Sir W. Watson Cheyne's work on "Tuberculous Diseases of the Bones and Joints," he says:

While there is very little to alter or add as regards the morbid anatomy and pathology of these diseases, there is no question that operative interference is very much less frequently employed at present than it was at the time when the first edition was published. When the tuberculous nature of these diseases was first demonstrated, the views as to the prognosis of tuberculosis were much more gloomy than they are at the present time, hence operations were very largely carried out with the view of attempting to eradicate the disease as well as to obtain a good functional result. Since that time, however, experience has been accumulating and has shown that with careful hygienic and local treatment, the outlook of tuberculosis, especially of the forms met with by the surgeon, is more favorable than was at that time thought, and the frequency of operation, especially at the early period of the disease, and in the absence of suppuration has been steadily diminishing. Indeed, the pendulum is tending to swing rather too far in the conservative direction, and I have attempted to take as far as possible a reasonable position between excessive operation on the one hand, and prolonged perseverance in conservative treatment on the other.

Ely in his recent work on "Joint Tuberculosis," says:

The general treatment includes diet, fresh air, exercise, and everything tending to improve the patient's nutrition. The bone lesion is to be regarded as a local manifestation of a constitutional disease, *and the treatment of it is influenced by this fact.* The patient must be kept under the best possible hygienic conditions. He must have fresh air all the time, good food, and careful attention to his digestion and other functions. The first requirement is that he be kept out of doors all day and sleep with his windows wide open at night. The wards of a city hospital are no place for cases of joint tuberculosis, and they do ill there. This has long been recognized. In theory the need of fresh air has also been recognized for some time, but in practice it is often neglected. . . . In former days when the idea of rest first obtained, patients were put to bed and were kept there for long periods but it was found that although the local lesion improved for a while, they soon suffered in general health. . . . Any treatment, no matter how attractive, is to be rejected if it keeps the patient long indoors.

He who believes that the diseased joint represents the entire disease in the body and that it must be attacked with the utmost vigor in patients of all ages, even if all the infected parts cannot be completely removed, will doubtless continue to practice the most radical means at his disposal. . . . He who regards the tubercular joint as a mere local manifestation of a general disease, and refuses on that account to operate, should, to be logical, direct his entire attention to constitutional treatment, and should refuse to avail himself of any means of local treatment whatever. Possibly it is the fallacy in the argument of one extremist that has raised up extremists on the other side. When those who practice inviolable radical treatment, become more conservative, the conservatives may become more radical.

As far back as 1903, the British Society for the Study of Diseases in Children, passed the following resolutions:

Resolved, First, the Society for the Study of Diseases in Children desires to express the opinion that the conditions under which children suffer from surgical tuberculosis—that is to say, tuberculosis of bones, joints, glands and skin—as treated at the present are unsatisfactory in results and unscientific in plan.

Second, this society is convinced that the treatment of such cases in urban hospitals cannot be justified by the results, but is attended by much unnecessary suffering and by many preventable deaths. At present these hap-hazard methods are not economical but lead to a wasteful expenditure of time, energy, and of hospital funds.

Third. This society is of opinion that children suffering from surgical tuberculosis should not be treated in hospitals situated in cities or large towns, but in properly equipped institutions in the country or at the sea side. Such hospitals to be devoted to the treatment of such cases only, in the same way as open air sanatoria are devoted to the treatment of pulmonary tuberculosis.

The foregoing quotations from such eminent authorities together with our own experience, ought to be sufficient to convince skeptics, if any such there be. I take it for granted that it has been proven definitely that there is but one treatment of surgical tuberculosis, namely, constant fresh air, and all that is included in the modern method of treating pulmonary tuberculosis, together with orthopedic and conservative surgical treatment. It is perhaps a waste of time to discuss this matter, especially before such an intelligent body of medical men as is represented by this society. The most powerful agents in our possession for the inhibition and destruction of the tubercle bacilli are sunlight and fresh air and abundant nourishment. In the treatment of surgical tuberculosis, not only are mechanical and operative measures necessary, but all the accessory conditions of health are essential. Who has not observed the influence of darkness, poverty and vice on the general health, and yet how many realize the importance of securing the brighter and better conditions?

Early in the campaign against pulmonary tuberculosis, the plea for sanatorium treatment was based on the ineipient ease, on the assumption that it was not practicable to treat all stages of the disease in one institution. Many sanatorium physicians are now convinced that it is not only practicable, but in many respects even desirable and certainly far more economical than to provide separate institutions for the different stages of the disease. Personally, I believe that these institutions should not only make provision for all classes of pulmonary tuberculosis, but for surgical cases as well. In other words instead of being built for special forms of the disease, should provide for the treatment of tuberculous cases of every kind and character. It may be that I stand alone at present in taking this somewhat radical position, but I am fully persuaded that this will be the final solution of the sanatorium problem.

We are on the threshold of the construction of a large number of sanatoria for the treatment of pulmonary tuberculosis; therefore, if I am correct in the opinions expressed, now is the time to take the necessary steps to make provision in these institutions for the care of surgical forms of the disease. For example, on the outskirts of this city a large municipal sanatorium is being built for the treatment of pulmonary tuberculosis. If provision has not already been made, it should be, as I believe, for surgical cases, and likewise in every institution already in existence, and those which will be built in the future. Whether or not this plan is followed, it is high time that better provision should be made for those cases than is afforded by the general hospital. My experience in the treatment of surgical tuberculosis is too limited to warrant me in expressing an opinion, but in conversation with numerous surgeons I am led to believe that the present methods of treatment in vogue in this country

are exceedingly unsatisfactory. The patient is given the benefit of a splendid surgical operation, but without proper after-care. I am fully persuaded that the best results will be obtained if the splendid technic of the American surgeon is supplemented by proper hygienic dietetic after-care together with such additional advantage as may be gained by tuberculin, vaccines and other adjuncts to the treatment employed in pulmonary tuberculosis.

Surgeons cannot provide sanatoria for the care of their tubercular patients any more than they can general hospitals, nor have they time to devote to the treatment even if these are provided. It would seem to be a more practical way to co-ordinate the work of the surgeon and the physician. So far as I know, there is no precedent for this method, but this is no reason why it is not feasible. If pulmonary tuberculosis can be successfully treated in any climate or altitude near or remote from the sea, there is no reason why surgical tuberculosis cannot also. We were formerly taught that certain attributes of climate were essential in the treatment of pulmonary tuberculosis. These theories are all exploded and make it easier to disprove that either sea air or mountain air are essential to the treatment of surgical tuberculosis. The way to do a thing is to do it. This is what I am asking you to do. I am not pleading that all cases requiring treatment shall be placed in institutions, but only such as are now placed in the general hospital, or such others as may in the opinion of the surgeon, be more successfully treated if special facilities are provided.

The time at my disposal is too short to give the reasons for my contention. The objections that may be raised are purely theoretical and I feel that a practical demonstration is all that is needed to convince the most skeptical. To this end and to show my faith by my works, I have installed a fully equipped operating room in the new apartments which are just now completed at the Ottawa Tuberculosis Colony, which is placed at the service of surgeons who may desire to use it.

I have no disposition to invade the field of surgery. I do not believe it is now, or ever will be, practicable for sanatorium physicians to undertake operative procedures unless it may be those of a minor character. My scheme comprehends the co-ordination of the work of the surgeon and the physician in a plan which I believe will be to the distinct advantage of the patient and the mutual benefit of the surgeon and physician. The nature of the work is such that neither acting independently of the other can achieve the best possible results.

My purpose in presenting this subject for your consideration at this particular time, is that I believe you can give direction to a movement for the betterment of conditions affecting the class of cases in question and that this movement should have its origin with the surgeons by encouraging and demanding that better provision be made for their surgical cases. If we wait until the institutions which are destined to be constructed in the near future are completed, it will be more difficult and expensive to have the necessary changes and additions made to accommodate surgical cases. If we depend on separate institutions, it will

prove far more expensive and make the possibility for their care far more remote, hence a concerted movement now will not only hasten, but make more certain, the accomplishment of this object.

All I am asking of you is to place the after-care of your cases in the sanatorium instead of, as now, in the general hospital. If you encourage this plan, I feel assured that you will give a decided impetus to a movement for the better provision for this class of cases, and without your encouragement and assistance, a more rational treatment of surgical tuberculosis is in the dim, distant future.

No matter how apparent a thing may seem, there are always those who must be convinced by an actual demonstration before they will believe. I am simply asking you to assist me in making this demonstration.

Will this representative body of surgeons be the first to aid a movement which will doubtless mark an epoch in American surgery?

I have not thought it necessary to enter into an extended argument in support of my position. I rest my plea on a simple statement of facts. If you are familiar with the situation, no argument is needed. If not, I have faith that if you will investigate you will be in substantial accord with the views herein expressed.

I wish to thank you most cordially for this opportunity to present my views and hope they may receive that consideration at your hands which I believe the importance of the subject demands.

WHAT SHOULD BE DONE WITH TUBERCULOUS PUERPERAE AND THEIR CHILDREN? *

CHARLES S. BACON, M.D.
CHICAGO

According to the United States Census Mortality Report for 1909, about two women in a thousand of child-bearing age died of tuberculosis of the lungs. We may assume that the average length of life after acquiring the disease is from five to eight years. Of those who contract tuberculosis some recover and live many years, others die within a year or two. Our assumption of an average duration of life after infection is based on the conclusions of a large number of clinicians. There are then from 1 to 1.6 per cent. of women of child-bearing age with tuberculosis. It is generally agreed that tuberculous women are as liable to pregnancy as the non-tuberculous. Hence of the 60,000 pregnancies annually in Chicago that continue to viability of the child, 600 to 1,000 occur in tuberculous women.

I do not propose to discuss at length tonight the question of the management of pregnancy complicated with tuberculosis. Some contend that pregnancy should be interrupted in every case where the gravida has an active tuberculosis. It then becomes necessary to define what is meant

* Read before the Chicago Medical Society, Nov. 27, 1912.

by an active tubercular process. How long after the disappearance of fever or of bacilli in the sputum can we pronounce the patient free from an active tuberculosis. Generally we advise a patient to wait at least a year or better two years after the disappearance of fever and bacilli, before becoming pregnant. But if she become pregnant before the limit shall we recommend in all cases a therapeutic abortion?

The indications for interference are generally divided into two classes, the vital and the prophylactic. If a gravida is rapidly getting worse an operation may be done to save her life. Unfortunately the result is generally bad; she dies in a few weeks or months. If she is in the second half of pregnancy when the condition becomes dangerous it might be better to carry on the pregnancy till the child is safely viable and so save a child even if the mother succumbs.

The prophylactic indication is based on the assumption that the pregnancy, if allowed to continue to term, will make the tuberculosis worse, and that its interruption will not injure the patient as much as its continuance. Some have tried to explain the detrimental effect of pregnancy by attempting to show that in pregnancy there is a condition of lipoid anemia, a kind of cholesteremia that is favorable to the development of the tubercular germs. On the other hand, some clinical observers deny that pregnancy always stimulates the tubercular process and claim on the contrary that the increased nutrition, characteristic of pregnancy, frequently acts favorably on the disease.

It is generally admitted that the patient is apt to decline during the puerperium, even sometimes in mild cases. Perhaps the latent infection foci break down during the strain of labor or injuries or genital tract infection diminish the resistance of the patient.

The collected reports of the results of therapeutic abortion by individual observers are not very favorable. Veit found an absolute failure of the operation to improve the condition of the patient in 43 per cent. of cases collected by him. Tremblay, of Saranac Lake, who is an advocate of induction of therapeutic abortion and has made a larger number of operations than perhaps anyone else in the world, has had somewhat better results, but yet not such as to warrant the establishment of a general rule.

The social condition cannot be neglected. The chances of the patient are much better both during pregnancy and the puerperium if she can be properly cared for. A poor woman in a crowded tenement has much less chance than a well-to-do woman who can have the best of food and care. Without recognizing the "social indication" for inducing abortion the social condition is an element in the prognosis, and therefore a factor in the prophylactic indication.

Personally, I believe that there are a small number of cases—perhaps 10 per cent.—where therapeutic abortion is proper. Rarely it is indicated for the vital indication. Generally in the second half of pregnancy we should make every effort to bring the fetus to a safe viability term. In the first half of pregnancy if the patient, while under the most approved treatment, grows worse, as shown by fever, cough, loss of weight, hemop-

tysis, after allowing for the nausea of the second and third months, then abortion should be induced.

But whatever be our advice or our ideas of the interference with pregnancy, a considerable number of tuberculous gravidæ will carry their children to term. Some would reject the advice of a physician because of a desire for children or because of ethical or religious considerations. There will probably continue to be over 500 tuberculous puerperæ every year in Chicago.

These women and their children are most important foci for the spread of the disease and furnish one of the great obstacles to the fight against the white plague that is now engaging so much attention of the medical profession and the laity. Even if the patient comes to her confinement in good condition, the strain of labor reduces her strength. If she does not succumb, her convalescence is long. She must nurse her child, of course, and it becomes infected, either to perish in a few months or to carry a latent infection which later develops in childhood or early adult life.

Probably one-fourth of the 1,100 or 1,200 women of child-bearing age who die annually in Chicago from pulmonary tuberculosis are puerperæ, or have passed through pregnancy within a year. Perhaps three-fourths of the 250 children under 5 years of age who die from tuberculosis every year in Chicago are born of tuberculous mothers.

With proper care much of this loss and danger can be avoided. Sometimes help must be given in the later weeks of pregnancy. Occasionally induction of premature labor is desirable. Labor should be managed so as to avoid all possibility of wound infection and prevent hemorrhage and all possible loss of strength. Then comes the period of greatest danger—the puerperium. The mother should have the best possible care that is afforded by the present system of management of tuberculosis. This implies especially rest, feeding, fresh, pure air and absence of worry. The latter item refers particularly to household worries and anxiety about the child. Nursing should not be allowed as a rule, because it is a drain on the strength of the mother and because it leads to the infection of the child. If it is found possible to get some milk from the breast by artificial means without weakening the mother it may be tried in the interest of the child. The puerperium, during which the mother should be kept under treatment, should be held to last three months after the birth of the child.

Managed in this way there is no doubt that very many puerperæ that now are lost could be saved. It is obvious, however, that such a course of treatment as here indicated is now a great exception; even among the well-to-do this treatment is not carried out because its importance is not sufficiently recognized by the profession and therefore not recommended and insisted on. Among the poor it is of course an impossibility, unless the means are provided by the state or by charity. Probably there are over 300 tuberculous gravidæ a year in Chicago who would require such assistance.

All will probably agree that proper care, such as has been outlined, can be given the poor only in sanitariums. The municipal and other dispensaries have done and are doing very valuable work in helping the tuberculous poor, in teaching them to care for themselves and avoid infecting others. But the tuberculous puerpera and her child cannot have at home the conditions that are essential to her recovery.

Although there are 30,000 hospital beds for consumptives in this country, yet there is no provision made for this class of patients. It seems somewhat strange that the importance of their part in spreading the disease has not been recognized by some effort to provide for them. I am glad to take up this matter now before it is too late to secure some provision in the new municipal sanitarium of this city. The Directors have expressed a desire to study the problem thoroughly and do what is necessary. With 850 beds, including a well-equipped infirmary, it would seem possible to make a good beginning that will reflect credit on the city and prove an example for other institutions.

Four things will be needed: 1. Provision for gravidæ. 2. A well-equipped confinement room. 3. Provision for puerperæ. 4. A well-planned nursery, whose equipment should include an incubator.

How many women would take advantage of this sanitarium, or how many could be induced to go there? The greatest difficulty would come from those who would need the care most; that is, from women who already have one or more children at home. If the other children are infected it would be very desirable to have them also in the sanitarium. This would imply a large Children's Department which must therefore be a very important part of the institution.

In the Chicago Polyclinic Dispensary of the Municipal Tuberculosis Sanitarium during the last year from November 1, 1911, to November 1, 1912, there have been treated 1,076 cases. It is estimated that about one-third of these cases are women of child-bearing age, or about 350. Among this number there have been ten to fifteen pregnant women. Three of the babies born are known to have died. During the same period there have been in the entire Dispensary Department 8,455 cases. If the same proportion of pregnancies exists in the entire institution, as in the North Side Branch, there have been between 80 and 120 cases of pregnancy. The influence over the patient that is exerted by the physicians and nurses of this institution is so great that it is probable that a majority of these women could be sent to the proposed Obstetrical Department of the hospital. A still greater number would be referred by physicians all over the city.

For the first year it is possible that provision would need to be made for not more than 100 to 150 cases. Counting on a residence of three months this would require only twenty-five to forty beds. I have no doubt that in the course of three years twice this number of beds would be needed.

One of the greatest difficulties in giving proper hospital care to poor women at the time of labor is the fact that they cannot leave their families. If they find a friend who will help them out it will be only

for a few days. Even after a difficult obstetrical operation the puerpera frequently must leave the hospital at the end of a week. This same difficulty will tend to nullify or handicap our best efforts to protect the tuberculous mother. We need an institution to provide temporarily for children who are deprived of the mother's care for a few weeks or months. I believe that we must eventually have one or more children's homes in this city supported by the municipality. Such homes would be very important adjuncts of the tuberculosis hospital and dispensary, but they would also serve for children deprived temporarily of a mother's care because of other diseases than tuberculosis.

The question may be asked why can these patients not be confined in the County Hospital? The Obstetrical Department of the County Hospital is well managed and, as a rule, the attendance during labor is skilful. Most of the patients under consideration would be better off there than at home for the labor. But it is impossible in the large wards of a general hospital or even of an obstetrical hospital to give the tuberculous woman after confinement the care she needs. Moreover, in the puerperal ward of the County Hospital there would be great danger that the tuberculous puerpera would infect the other patients. Likewise it would be impossible to keep the tuberculous patient as long in the County Hospital as would be necessary. A special institution is needed for tuberculous recently delivered mothers the same as for other tuberculous patients.

What has just been said about the County Hospital will apply to the Chicago Lying-In Hospital. This institution is about to build a new hospital which will be of incalculable value to the poor women of the city, but it also cannot provide for the tuberculous women under consideration.

The great prophylactic value of the proposed obstetrical department of the tuberculosis sanitarium in destroying the foci of tuberculous infection can be admitted by all, but thoroughly appreciated only by those intimately connected with the work in the anti-tuberculosis movement. I anticipate the unrestrained support of all such workers to the proposition made tonight. The importance and value of institutional treatment in the management of tuberculosis as a complication of pregnancy and labor has been emphasized by several European writers who have discussed the subject during the last two years. If the entire medical profession and the intelligent laity will give a like loyal support it will help greatly in carrying through the measures that will be needed to establish the institution—not only in this city, but also in the state and nation.

In the meantime we must give the best care possible to these unfortunate women in the absence of institutional help. Even if our highest hopes are fulfilled it probably will be many years before we shall see the great majority of the mothers properly cared for in institutions. Hence we must seriously study how we may improve the home management of these patients.

All patients, poor or well-to-do, should be instructed concerning the special danger of labor and the puerperium, and taught how to make provision for avoiding these dangers as far as possible. They must

arrange for help in the household work for as long a period as they can. At home among the poor it will be practically impossible for the mother to avoid nursing her child. It is indeed questionable whether she should make the attempt unless she has considerable fever and much cough and expectoration. If she herself cares for the baby, washes and dresses it, she will infect it quite as certainly as when she gives it the breast. I would prefer to have the mother relieved from all household work and as much as possible from the care of the baby and give the strength thus saved to the nursing of the child. With proper care in handling the baby, the danger of its infection while nursing is not so very great. Of course, we do not believe that infectious bacilli are in the breast-milk in most cases. If the woman can draw the milk by massage or by pumping, it is better for her to do so. The important thing is that the baby be protected from the mother's sputum and breath. It might be well for her to wear a piece of gauze over her mouth while nursing the child. The important thing for the mother is to avoid fatigue, breathe fresh air day and night and get enough good food and keep from worry.

It is the duty of the physician and nurse to educate the patient. The education or training should begin early in the pregnancy. The rules to be carried out must be stated with great clearness and repeated over and over again. Then she must be watched very carefully to see that she carries out the rules exactly. Here as in many other instances in the practice of medicine, success is achieved only by paying attention to details.

The most important part of the management of these patients must be entrusted to the nurses. It is to this most valuable class of medical practitioners that falls the duty of protecting the patient and all that come in contact with her. It is on the staff of nurses of the tuberculosis dispensary that the community must chiefly rely for its protection against the spread of the tuberculosis infection and in this body of devoted workers rests the hope of an eventual escape from this ancient and present plague of mankind.

EXAMINATION OF EMPLOYEES FOR TUBERCULOSIS *

THEODORE B. SACHS, M.D.

CHICAGO

Systematic examination of employees for tuberculosis leads to the detection of the following classes of cases:

1. "Open" tuberculosis (tubercle bacilli in the sputum). Most of these cases are moderately or far advanced; a small proportion may be just beyond the incipient stages.
2. "Active" tuberculosis, still "closed" (no tubercle bacilli in the sputum); a class of cases varying according to activity and extent of the

* Read at the Fifteenth International Congress on Hygiene and Demography, held at Washington, D. C., Sept. 23 to 28, 1912.

process: chiefly "incipient"; some "advanced." Unless given timely and efficient treatment, a large percentage of these cases pass into Class 1 (become "open," communicable).

3. "Inactive" tuberculosis: signs of a healed lesion; no symptoms of "active" disease. A previous history of "active" tuberculosis or a tuberculous family history can be elicited in a large proportion of these cases.

4. Predisposition to tuberculosis (by malnutrition, anemia or any condition undermining resistance).

METHODS OF SOLUTION APPLICABLE TO EACH CLASS OF CASES AND MEASURES FOR UPBUILDING OF THE ENTIRE WORKING FORCE

It will be seen from the consideration of the above-stated classes of cases, that the tuberculosis problem in a working place presents the following important phases for solution

1. *Detection and Segregation of "Open" Cases of Tuberculosis.*—A large number of these cases in working places without medical supervision remain undetected for months or years, acting as prolific sources of infection. Their elimination from close association with other employees, as well as the immediate institution of hospital, sanatorium, or, if feasible, home treatment, is an imperative step in the interest of those afflicted as well as of the entire working force. Institutional treatment safeguards best the interests of all concerned.

Those with the tuberculous process arrested and working power restored by institutional or home treatment, but still showing tubercle bacilli in the sputum, may be given either suitable outdoor work, or indoor work in hygienic, well ventilated quarters, but not in close contact with other employees. Conscientious, painstaking use of all the necessary precautions on the part of the tuberculous employee is a factor to be considered in the solution of each individual case.

The number of "open" cases of tuberculosis, discovered during the first few months of operation of an efficient system of medical examinations in a working place may be considerably larger than at any subsequent time, and yet the number of "open" cases is small as compared with the entire working force or the second, third and fourth classes of cases above mentioned.

It is *not the number* of "open" cases, but *the possibility of transmission* lurking in each case of this group, through indiscriminate expectoration, that renders control of "open" cases of tuberculosis most important from the standpoint of health of the entire working force. An efficient system of medical examinations in a working place should have, as one of its most important objects, the timely detection and control of these cases.

2. *Sanatorium or Home Treatment of "Closed," "Active" Cases of Tuberculosis.*—As previously stated, cases of "closed," "active" tuberculosis vary considerably, according to the degree of activity and the extent of the tuberculous process. The variation extends from the very slight impairment of the general condition, with little constitutional disturbance and no positive physical signs of pulmonary involvement, to progressive

deterioration of health, with afternoon fever, various symptoms of toxemia and marked physical signs of a progressive lesion.

Cases of the mildest type frequently respond favorably, without discontinuance of work, to a rearranged regime of life, embracing particularly longer hours of night rest, avoidance of overexertion, a more liberal diet and abundance of fresh air. A limited period of sanatorium treatment may be advisable, however, from an educational standpoint, in a proportion of cases even of the mildest type.

As a general rule, temporary discontinuance of work and treatment in a sanatorium are indicated in the majority of "active" cases, and this should be continued in each individual case up to the point of arrest of the tuberculous process and restoration of the working capacity.

Early diagnosis of active cases of tuberculosis is most important from the standpoint of chances of recovery and duration, and, consequently, the expense of treatment.

The earlier the diagnosis, the better are the chances of recovery and the shorter is the period of treatment.

3. *Increase of Resistance of Employees with Signs of Inactive Tuberculosis and of Those Predisposed to the Disease.*—Employees with signs of "closed," "inactive" tuberculosis (Class 3), as well as those "predisposed" to the disease (Class 4: the anemic, poorly nourished, those with frail physique, etc.), may be classed under the general designation of "employees with low resistance." This group forming a considerable proportion of any working force, offers a fruitful field for correction based on thorough investigation of each individual case.

Due consideration should be given in all such cases to the following factors influencing the health of the employee: *first*, the physical fitness of the employee for the given task (degree of exertion involved, position at work, hours, surroundings, etc.); *second*, personal regime: sufficient rest, ventilation of bedroom, nourishing diet, avoidance of harmful conditions and practices, etc. With all these items in the personal life of the employee thoroughly analyzed by the examining physician, considerable improvement of the physical condition of an employee is often possible even with a very slight rearrangement in his daily regime.

The task of the physician is that of a teacher of "right living." Personal instruction given by him to the employee followed by detailed home instruction by the nurse should mark to the employee the stepping stone to better health.

4. *Instruction of the Entire Working Force in the Essentials of "Right Living."*—Noonday or evening talks on "essentials of right living," "prevention of disease" and similar topics given from time to time to the working force, or to its separate groups, tend to the enlightenment of the worker on the essentials of health and its preservation. The interest in matters pertaining to health is rapidly increasing among working people and a physician, speaking on this subject, "to the point" and in simple language, will find in them an appreciative audience.

It is inevitable that the spread of information on maintenance of health among employers and employees is followed by the gradual elimination of conditions in working places which are detrimental to health.

The ultimate result of operation of a system of medical examinations and instruction in a working place is a higher standard of health and efficiency of the working force as well as a stronger bond of understanding between the employer and employees.

EXAMINATION OF EMPLOYEES FOR TUBERCULOSIS A PART OF GENERAL
MEDICAL EXAMINATION. TIME OF THE FIRST AND
SUBSEQUENT EXAMINATIONS

Examination for tuberculosis should be a part of the general medical examination. An efficient general medical examiner of an industrial concern is fully conversant with the disease. It is desirable, however, that all medical examiners should acquaint themselves with methods of diagnosis and solution practiced in well conducted tuberculosis clinics.

It is apparent that in the interest of all concerned the *first examination should take place at a time of the engagement of the employee*. This is being done at present, with some variations, in a few Chicago concerns. Preliminary information is obtained by means of an application blank including questions pertaining to former and present health of the applicant and his general appearance is scrutinized by the employment manager and nurse assigned to his office. Suspicious cases are submitted to the physician for immediate examination. All other successful applicants are examined during the first week of their employment. The International Harvester Company examines at present all of their applicants for work; Sears, Roebuck & Company are introducing the same.

In other concerns the medical examination of the employees comes with the application for membership in Employees' Benefit Association, which includes a varying proportion of the working force. This is the case with Sears, Roebuck & Co., International Harvester Co., Montgomery Ward & Co., Commonwealth Edison Co., Chicago Telephone Co., Swift & Co., et al. Welfare departments operated by these firms also bring to the attention of the medical examiner a certain proportion of suspicious cases.

The general medical examination of an employee should be *repeated* at certain intervals and also when an employee becomes sick while at work, when the appearance of the employee or certain symptoms suggest the possibility of a gradually developing illness, or on return to work after a period of absence due to illness.

THE CAMPAIGN IN CHICAGO FOR EXAMINATION OF EMPLOYEES
FOR TUBERCULOSIS

Eighteen months ago a plan of examination of employees for tuberculosis was submitted to the Chicago Tuberculosis Institute. The plan is described in detail in this paper. To put the plan into operation the Institute appointed a Committee on Factories, which since that time has been conducting a campaign among employers of labor in this city.

The important problem in Chicago, as it would be in any other city, has been to *interest* the employer in the necessity of such examinations. The chief obstacle to the introduction of any system was the lack of information on the part of the employer that there is any such thing as a tuberculosis problem in his place, as well as the lack of appreciation on his part that any benefit can accrue to the firm through the operation of a system of examinations.

In making the appeal to the employers we have placed emphasis on the financial loss sustained by the employer through the imperceptibly growing reduction of working power in the early stages of tuberculosis, the danger to the entire working force from the unknown, uncontrolled "open" cases of the disease, the constant infection of other workers, the subsequent loss of experienced men, the reduction of the general efficiency of the entire working force through the existence of uncontrolled sources of infection, etc. In our campaign we were generally assisted by the humanitarian attitude of the employers toward their workers.

Early in the campaign, a chart was devised which proved of value in the conferences between the Committee on Factories of the Chicago Tuberculosis Institute and the employers whom we were eager to enlist. The chart, as here reproduced, shows in concentric circles the various groups of tuberculosis cases, which you would expect to find in a working place; the size of the circle showing in a general way the relative number of workers included in each group and the degree of shading pointing to the relative importance of the group from the sanitary standpoint.

It was very essential to make it clear to the employer that systematic examination of employees for tuberculosis will disclose not only the "open" and "active" cases of tuberculosis the solution of the majority of which lies in institutional treatment, but also the larger group of workers in whom a predisposition exists either because of latent infection or because of malnutrition, anemia, etc. One of the important objects of the examinations, the employer was told, is to raise the resistance of these groups through proper medical advice, education in right living, change in occupation if necessary, etc. By the spread of this education in "right living" among the employees, the final result is a "higher standard of health and efficiency of the entire working force."

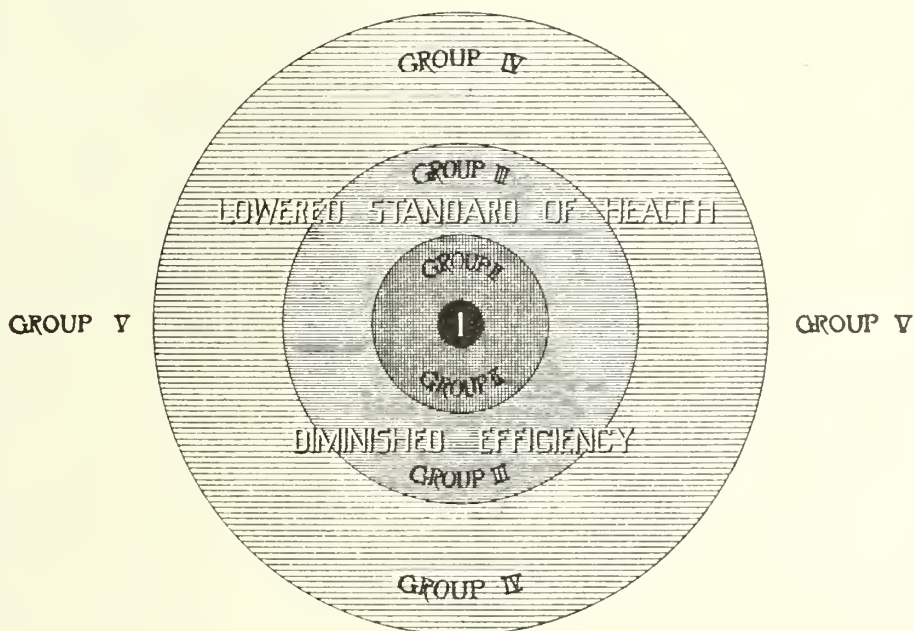
As the result of a campaign conducted by the Committee on Factories of the Chicago Tuberculosis Institute during the last eighteen months, systematic examination of employees for tuberculosis is at present in operation in the shops of the International Harvester Co., Montgomery Ward & Co., Chicago Telephone Co. and Swift & Co. Sears, Roebuck & Co. have for some time past paid special attention to tuberculosis as a part of the general examination.

The physicians connected with the above and other concerns meet with the Committee on Factories of the Institute from time to time to discuss the important phases of their work, and these meetings are very important in the gradual formulation of principles and practices. At the four conferences so far held, the subjects chosen for discussion were: "The Best Method of Campaigning for the Extension of the Examina-

The TUBERCULOSIS PROBLEM IN A WORKING PLACE

by Theodore B. Sachs

GROUPS OF WORKERS



CONDITION

REMEDY

GROUP I <i>Tuberculous.</i>	<i>"Open" Communicable Cases.</i>	<i>Periodic Medical Examinations</i>
GROUP II <i>Tuberculous</i>	<i>Disease Active, Progressive.</i>	<i>Right Conditions for Entire Working Force.</i>
GROUP III <i>Tuberculous.</i>	<i>Disease Inactive.</i>	<i>Education of All in Right Living.</i>
GROUP IV	<i>Workers With Low Resistance.</i>	<i>Hospital & Sanatorium Treatment for Groups I, II & part of III.</i>
GROUP V	<i>Workers in Average Health.</i>	

RESULT

HIGHER STANDARD of HEALTH AND EFFICIENCY

For Copies of This Poster Apply to the Committee on Factories of
The Chicago Tuberculosis Institute

tion of Employees to Other Concerns," "The Time of the first Examination of the Employees," "When Should the Examination be Repeated," "What Should the Examination Consist of," etc.

At the next meeting representatives of the above firms as well as of the large department stores and their physicians, will meet with the Committee of the Institute to further discuss the various features of the problem.

The prospects are for the gradual introduction of the principle of medical examinations into an increasing number of concerns.

THE CAMPAIGN IN CHICAGO FOR EXAMINATION OF EMPLOYEES TUBERCULOSIS

The details of the plan submitted to the Chicago Tuberculosis Institute eighteen months ago and since then advocated under the auspices of its Committee on Factories is as follows:

1. *Physician to examine all suspicious cases.*

In places with established medical service, this task may be assigned to the physician on the staff of the firm. In large establishments a special "tuberculosis" examining physician may be necessary. In either case, possession of special experience in the diagnosis of tuberculosis is very important.

Duties of the physician: examination and diagnosis of cases; disposition of those found tuberculous; instruction of the sick in the essentials of treatment and of the "predisposed" in right living and in measures tending to increase the general resistance; frequent noon or evening talks to the entire working force on maintenance of health and prevention of disease.

Cooperation with the family physician of the employee in all cases in which the family physician prefers to retain control of the case.

2. *Trained Nurse to assist the physician.*

Duties: to assist the physician during examinations; to visit and study the homes and living conditions of employees pronounced "tuberculous" or "predisposed;" to instruct in the fundamentals of right living and in the methods of care and prevention by actual demonstration in the employee's home; to gather in each individual case information essential to its right solution.

3. *Classes of cases to be examined.*

At a conference between the superintendent, physician and nurse it is agreed that the employees are to be watched for certain symptoms possibly indicative of tuberculous infection. A list of these symptoms is given in a card prepared for the guidance of superintendents and foremen, which is printed in full below:

DIRECTIONS TO FOREMEN OR OTHERS IN CHARGE OF EMPLOYEES TUBERCULOSIS IS CURABLE—IF DISCOVERED EARLY

PLEASE THEREFORE WATCH FOR THE FOLLOWING GROUPS OF CASES:

1. Employees below weight, weak or anemic.
2. Employees whose working power seems on the wane, without apparent cause.
3. Employees from houses where death from tuberculosis occurred, or where a case of tuberculosis exists, or employees who have been previously treated for tuberculosis.

4. Employees who have the following, due frequently to tuberculosis:

- (1) Gradual loss of weight and strength.
- (2) Fever in afternoon (even though slight).
- (3) A lasting cough or cold.
- (4) Loss of appetite.
- (5) Hoarseness, continued or recurring.
- (6) Night sweats.
- (7) Spitting blood.
- (8) Tired all the time.

Committee on Factories of
The Chicago Tuberculosis Institute,
1351 Otis Building, Chicago

4. *Examination.*

With the compilation of a list of suspicious cases, all such cases are submitted to thorough medical examination.

Each individual case is classified, (a) according to diagnosis: "tuberculous" or "non-tuberculous," "active" or "non-active," "open" or "closed;" (b) according to necessity of change of occupation or discontinuance of work; (c) according to need of hospital, sanatorium or home treatment.

The solution of each case is considered after a full analysis of all its medical and social aspects.

5. *Supervision of various groups of cases.*

Close supervision is maintained over (a) employees classed as "predisposed;" (b) employees returned to work, with disease "apparently cured" or "arrested" by institutional or home treatment; (c) employees taking "home treatment" under the direction of the company's physician.

The above described arrangement aims at continuous watch of health of employees engaged after (or without) a preliminary medical examination. The plan resolves itself finally into (1) medical examination of applicants for work, and (2) supervision of health of employees while at work.

CONCLUSIONS

Very important consideration prompted the campaign in Chicago for the introduction of systematic examination of employees for tuberculosis: *first*, the realization that *early* diagnosis of tuberculosis can be best attained with a system of examinations of working people, that will detect the disease long before the pronounced symptoms manifest themselves, detected while they are at work frequently unsuspecting the presence of any disease; *second*, the operation of a system of examinations in a working place and the knowledge of the existing conditions gained thereby eventually leads to the improvement of sanitary conditions and enlists the support by the employer of adequate and efficient institutional provision for the treatment of tuberculosis; *third*, the further realization on the part of the workers, employers and the community at large of the present utter helplessness of a worker in the case of illness will lead to more comprehensive measures for the protection of the worker and his family, in the case of his illness (further extension of the principle of the employees' benefit associations, workmen's insurance, etc.).

Experience in anti-tuberculosis work in a community teaches us that support of any element in the community can be permanently gained by

a clear demonstration of the relation of that element to the existing problem, and this is becoming apparent in our present campaign in Chicago.

Those who wish to get further details of the plan in operation may write to the Chicago Tuberculosis Institute, Otis Building, Chicago.

To summarize: the aim of the described plan of examination of employees for tuberculosis is, *first*, detection and suppression of sources of infection in working places; *second*, detection of cases of the disease in the curable stages; *third*, guidance of all employees predisposed to the disease and of those who are re-employed after having recovered their health by sanatorium or home treatment; *fourth*, guidance of all employees in right living and methods of prevention; *fifth*, elimination, with the spread of information, of conditions undermining the health of employees.

THE USE OF TUBERCULIN IN DIAGNOSIS AND TREATMENT *

WALTER H. BULLIG, S.B., M.D.
CHICAGO

There are four tuberculins commonly employed. These are (1) the old tuberculin of Koch; (2) Koch's new tuberculin or the T.R.; (3) the bacillus emulsion, or B.E., and (4) the bouillon filtrate, or B.F. To give an idea of these various tuberculins, I might state briefly the composition of them. Koch's old tuberculin is the filtrate of a glycerin bouillon culture of the tubercle bacillus after boiling, usually in a partial vacuum, to about 1/10 of its original volume. One cubic centimeter of this is usually considered as 1 gram. In the preparation of Koch's new tuberculin living bacilli are taken from a bouillon culture, dried, finely powdered by grinding for a long time and then thrown into physiologic salt solution. That which does not go into solution at first is the T.R., or the residue, and this is later incorporated into an emulsion in salt solution with a small amount of glycerin by further trituration. Here the quantity in grams in any given volume can be accurately weighed. The soluble part that is discarded in the making of this tuberculin is often called T.O., or "die obere tubereuline." The bacillus emulsion is an emulsion of finely ground tubercle bacilli and is practically a combination of the T.R. and of this rejected T.O. with 50 per cent. of glycerin. Most manufacturers, to insure the death of the tubercle bacilli, heat the B.E. at about 60 C. The bouillon filtrate is a simple filtrate of a glycerin bouillon culture of the tubercle bacillus without any heating.

It will be seen, therefore, that each tuberculin has properties somewhat different from the others. In the old tuberculin, the heating modifies, perhaps destroys, some of the toxic principles, and concentrates others not so changed. In the bouillon filtrate there is no heating and

* Read at the meeting of the Englewood Branch of the Chicago Medical Society, Nov. 12, 1912.

no concentration. It will be noted that in the B.F. only the extra cellular soluble products of the growing bacilli are employed. In the old tuberculin there are extra cellular products and whatever is derived from the bacilli by heating. The T.R. contains the insoluble products of the bacillus itself, and the B.E. contains these and those substances of the body of the bacilli which go into solution in physiologic salt solution.

For the purpose of diagnosis, only the old tuberculin in various modifications is used. Perhaps the only reliable method in the adult is the subcutaneous injection of Koch's old tuberculin. In such a case the temperature and pulse every two or three hours for at least twenty-four hours before the injection must be known and for forty-eight hours after the injection, the patient taking a minimum of exercise during this period. Two mg. is a medium safe dose for a person weighing about 130 pounds. Smaller doses at the start and increasing at four-to-five-day intervals, may be employed in a patient under proper control. I consider more than 4 mg. for diagnosis an unsafe dose. A reaction is considered positive in twenty-four to forty-eight hours when there are present a general reaction, a local reaction and a focal reaction—all three. The general reaction is adjudged as present when the temperature is clearly a degree above the previous controls, and when the pulse is 10 or more beats faster. When the patient's temperature before the injection is high, or very irregular, such a tuberculin test should not be made because it can not be interpreted, and it might be stated here that much advanced cases may show no response. The local reaction consists of a red, swollen, tender area about 1 inch or more in diameter at the point of injection. By focal reaction is meant increased symptoms and physical signs at the site of the tuberculousis.

The von Pirquet test is made by scarifying two small areas on the arm after washing with ether and inoculating this area with a drop of the old tuberculin undiluted or better in a 20 per cent. strength, always using a third or control scarification with distilled water or salt solution. A reddened papule about a centimeter in diameter and coming on within twenty-four hours is considered a positive result. This method is of value only in children and particularly in those under the school age. In adults it should not be depended on for the reason that too many normal people react positively.

The Moro test is based on the same principles. Here the tuberculin is incorporated with equal parts of lanolin and a small portion is rubbed into the skin of the abdomen, with redness, vesicles and marked itching in twenty-four hours. I have had little experience with the Moro test, but should make the indications for its use those of the von Pirquet.

The ophthalmotuberculin reaction may be mentioned only to condemn it. I believe that hardly anybody uses it now. The old tuberculin is precipitated with alcohol and the residue redissolved in physiologic salt solution. One drop of a 1 per cent. or .5 per cent. solution is put on the conjunctiva of one eye, the other eye being used as a control. I have made a good many of these tests, and had no serious results. But I am convinced that the eye is too important an organ to take chances with, and in a little experiment done soon after Calmette announced this

method of diagnosing tuberculosis, I assured myself that positive reactions could be obtained in non-tuberculous cases that ran a temperature from other causes. A probable explanation of many of the serious results obtained by this method is on the anaphylaxis theory; that is, one doctor puts this tuberculin into the eye of a patient with a negative result but sensitizing the conjunctiva. Later a second doctor, not knowing of the first test, puts the tuberculin into the same eye with a bad result.

In the treatment of tuberculosis, different men use different tuberculins. I am reluctant to use any tuberculin that is constructed out of living tubercle bacilli, and consequently I rarely now ever use the T.R. The B.E. has this objection that it often causes painful infiltrations or suppuration at the point of injection. The ideal tuberculin, one containing all of the toxic properties, would seem to be a combination of the B.E. and one of the filtered tuberculins. Whatever product is chosen, the principles of the administration of all of the tuberculins are practically the same, and can be expressed briefly like this:

Begin with a small, an absurdly small, dose, say 1/50,000 mg., or even less; the earliest doses of all the tuberculins are practically the same; increase slowly, but constantly, at intervals of four to five days; the amounts of tuberculin finally given vary a good deal, up to 10 mg. and with some tuberculins, even much more; try never to get a distinct increase in temperature or any local or focal reaction; if a reaction is the result diminish the next dose; reduce the exercise of the patient for at least twenty-four hours after the injection, and insist on rest in bed if the temperature rises a degree or more from the tuberculin; when using a new dilution or when starting a different tuberculin, always give a little less than the former dose; it is wise to use more than one tuberculin in the treatment of any case; have the dilutions made up about every two weeks or less; above all, be sure your case is one suitable for the administration of tuberculin; and do not expect tuberculin, which is only an adjuvant, to remove the necessity for fresh air, rest and proper feeding.

Treatment with tuberculin is mainly by subcutaneous injection. I have had no experience with inunctions, mouth treatment or intravenous injections. I use practically only human tuberculins. I begin ordinarily with the bouillon filtrate, and increase this until I am giving about a half of a milligram. Then I follow along with old tuberculin and run this up in adults to 3, 4 or more milligrams. If I believe I am not getting good results, I stop the one I am using at a lower point, and begin on the B.E. I rarely give B.E. for a long time, but switch back to B.F., and end up on the old tuberculin. Such a course of treatment requires about seven or eight months, giving three doses in two weeks, and I tell my patient that if such a course can not be persisted in, it is wisest not to begin treatment. If I get a reaction, which I try always to avoid, I drop back with whatever tuberculin I am using to the dose which I know from my records will not give the reaction and then increase more slowly. The patient takes and records two afternoon temperatures every day while he is under observation and notes his weight each week.

The indications for the use of tuberculin can best be learned by enumerating the contra-indications. No one of course can make rules

regarding contra-indications which must always hold. There are always present the personal equation of the patient, the general conditions surrounding the patient, and the experience of the physician, but I am convinced that the following suggestions are, in the main, correct. I never give a patient tuberculin if I am assured that there is a rapid loss of weight. Such a patient I should first put to bed and watch carefully until the weight is more or less stationary. I consider a case with recent severe hemorrhages an improper one for tuberculin. I do not believe that patients with afternoon temperatures of over 100 F. should have tuberculin, and when there is a very low morning temperature, say 96 F., with slight afternoon rise in a known case of tuberculosis, this variation, and particularly the low morning temperature, should cause honest deliberation. I know that tuberculin often brings down high temperatures, but I believe the administration is subjecting the patient to considerable risk, and if undertaken at all, it should be with great care and with the smallest of doses. I will not at the outset give tuberculin when there is an advanced lesion, or where there are extensive or multiple lesions. Such patients should by the usual other measures show some improvement before tuberculin is administered. Some cases of glandular tuberculosis may be exceptions here. Acute cases are not proper subjects for tuberculin and the same may be said of patients with nephritis. With all other conditions good, I am not so fearful of a rapid pulse, provided it is not much over 100 F. I consider the diazo reaction in the urine a bad prognostic sign, and when this is present I believe tuberculin should be withheld. Tuberculin should be looked on as a very powerful poison, capable of harm if carelessly used. Its use in treatment is for the purpose of actively immunizing the patient, and where advanced or multiple lesions are present, the patient is already being auto-inoculated.

The advantages of tuberculin, always assuming that it is used with other acknowledged methods of treating, are (1) that the recovery of a patient with tuberculin is more rapid than without; (2) the healing of a small focus can be made more certain by adding tuberculin than by other treatment alone; (3) patients are more certain of escaping complications and febrile attacks; and (4) the immunity of the recovered patient is far greater when tuberculin has been administered, making relapses less frequent.

31 North State Street. _____

INHALATION TREATMENT: A NEW APPARATUS *

HOMER M. THOMAS, M.D.

CHICAGO

From the time of Hippocrates to the present, apparatus has been devised for human inhalation.

Infusions of aromatic herbs, balsamic vapors, chlorin, iodine, turpentine, muriate of ammonia, the steam of escaping sulphur springs, the air of salt mines, and the air of stables containing cattle, have been advocated.

* Read before the Chicago Medical Society, Nov. 6, 1912.

Inhalation includes (1) thermotherapy, because the inhaled vapors are warmer than ordinary air; (2) hydrotherapy, because water vapors are inhaled; (3) respiratory gymnastics, because the patient has to breathe deeply; (4) medicinal therapy when medicated vapors are used.

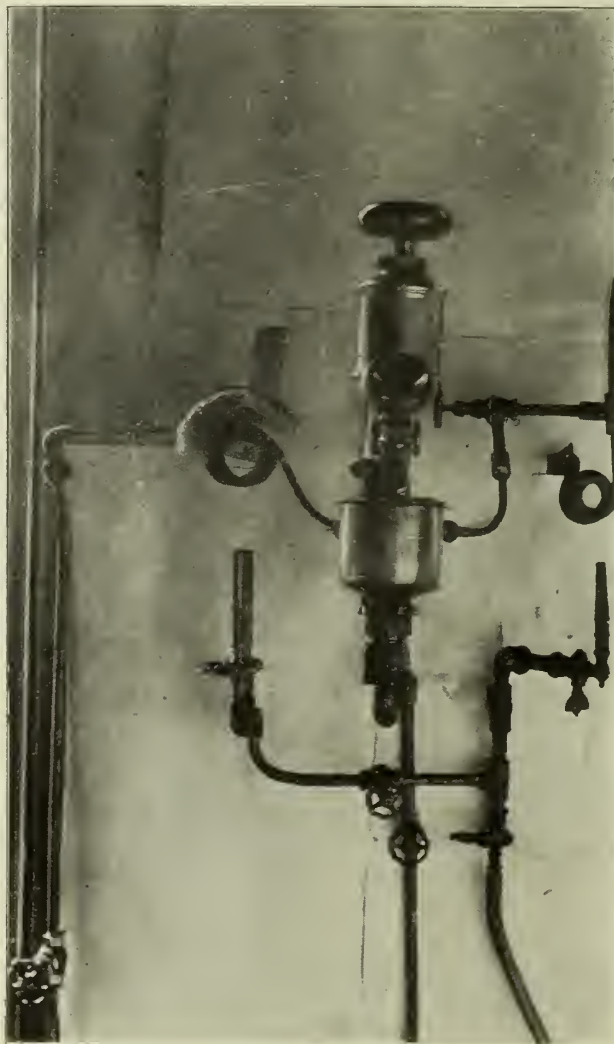


Figure 1.—Compressed air sterilizer and gauge.

As a result of inhalation of heated vapor, an active hyperemia of the mucous membrane takes place, and as a result an increased activity of the glands. This increased secretion of fluid helps to remove the tenacious secretion already present, and possibly it also has a chemical effect on the pathologic products. The deep breathing also helps to remove the secretion. This effect is greater the deeper the breathing. We can

instruct the patient to inspire slowly and expire quickly. In this way the inspiration takes place under lower pressure, so that during inspiration there is a slight venous stasis in the thorax—a sort of passive hyperemia. The medicines act by direct contact, disinfecting the pathologic

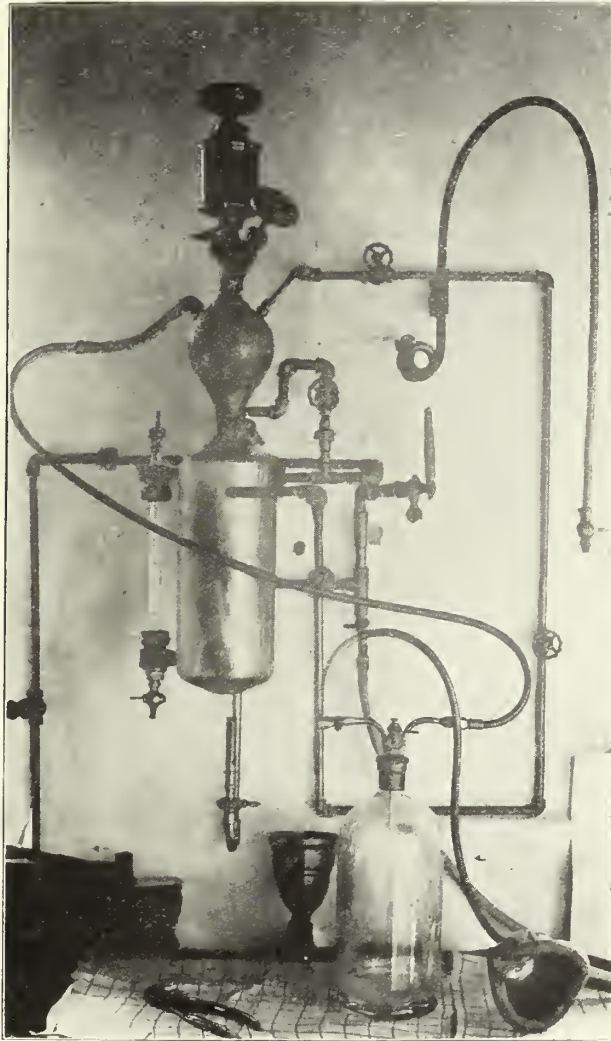


Figure 2.—Apparatus No. 1.

secretions and stimulating the diseased mucous membrane; moreover, they are absorbed and distributed to various parts of the body where they exercise a therapeutic effect. They are combined with CO_2 and given off, sometimes changed and sometimes unchanged. They penetrate to the diseased alveoli, so that they come in contact with the entire affected membrane and its secretions. Care should be taken not to use too con-

centrated vapors, for they may cause nausea and other unpleasant effects. The concentration must be constant throughout the inhalation.

EXPERIMENT 8.¹—Subject male, aged 40 years. Pole; place, Cook County Hospital; disease, secondary anemia and septicemia following suppurating tonsillitis. Vapor used, lanolin slightly flavored with oil of

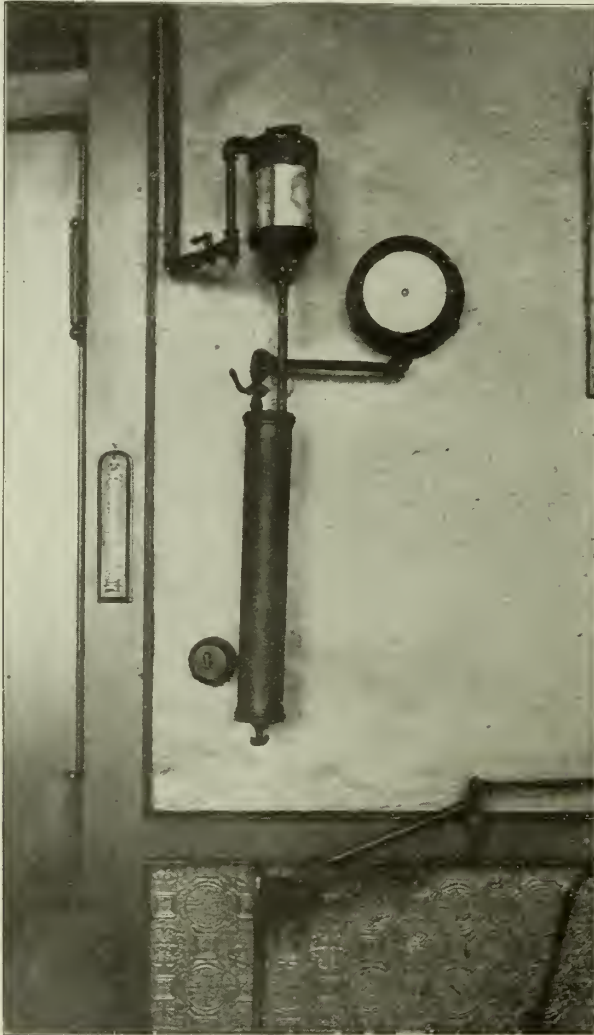


Figure 3.—Apparatus No. 2. Perfected.

gaultheria; time of inhalation, twenty minutes. The respiratory movements were very complete with unusually deep forced inspiration and almost normal expiration. All of the accessory respiratory muscles were

1. Jour. A. M. A., May 28, 1898.

brought into play during the period of inhalation. Previous to the vaporization the lungs of the patient were examined and found normal.

Soon after death a post-mortem was made. A small section was cut from the lower lobe of the left lung and placed on a freezing microtome. When ready, sections were made and placed under a high objective. They revealed oil globules in the alveoli. Another section of the lung from the lower left lobe was put in osmic acid the following morning and allowed to remain seventy-two hours. Sections were then made by a freezing microtome. They showed well stained oil globules within the alveoli. This I believe to be the first time a demonstration of a vaporized medicament penetrating into the pulmonary alveoli of a human lung has been made.

Inhalation therapy, either by nebulae or volatilization, is not a curative measure. It sustains the rôle of a topical benefit when associated with other methods of treatment. I believe it effective in influencing diseases of the respiratory passages, by modifying various symptoms. The tendency of atomized and nebulized medicine is to condense near the point of inhalation. By use of the new apparatus this factor is largely eliminated. There is a greater amount of heated medicament deposited on the respiratory surfaces. I believe the higher temperature carries the drugs used in greater quantity into the pulmonary alveoli. Within these limitations there is every good reason for its use.

I have proved by animal and human experimentation that medicated vapors penetrate to the alveoli. They should be used at a definite dosage and at a definite temperature. For dry laryngitis and pharyngitis menthol is valuable. In acute bronchitis with abundant thin secretion, turpentine and eucalyptus; in chronic bronchial catarrh, balsam Peru with menthol; for purulent bronchitis and bronchiectasis, lignosulphite.

In conclusion, the following benefits seem to me established as a reason for the general use of antiseptic nebulae in the treatment of the respiratory tract:

1. The respiratory capacity is increased.
2. The catarrhal condition of the air passages is diminished, thereby aiding a better introduction of air into the lungs.
3. The pulmonary passages are kept in an aseptic condition and the danger of new bacillary invasion minimized.
4. The marked relief of cough and dyspnea.
5. The alimentary tract is undisturbed by drugs, giving ample opportunity for the increase of vital resistance by suitable diet and constitutional treatment.
6. The treatment by the inhalation of antiseptic nebulae is rational and practical.
7. The new apparatus safely combines steam, sterilized compressed air and definite drug medication for treatment of the respiratory passages.

DISCUSSION

Dr. P. J. H. Farrell: Some fifteen or sixteen years ago I was much interested in the inhalation method of treatment. I tried many devices without success. The apparatus devised by Dr. Thomas is ingenious and useful. The difficulty I have always found is to have a continuous and uniform temperature with the antiseptic agent used. This factor he has undoubtedly overcome. Of course, the next question that arises is, to what extent will we get the antiseptic action on the tissues with this apparatus in excess of what we get by painting the pharynx. This device has opened up the whole field of inhalation therapy. Inhalation has been used with success since the dawn of medicine. The apparatus perfected by Dr. Thomas is far superior to the methods hitherto used and results by its use will be correspondingly better.

Dr. E. Pynchon: I have been employing nebulae for inhalation for several years and can speak favorably of the efficiency of such practice. The apparatus which I have employed was made for me by Truax, Greene and Co., several years ago. The bottle has a capacity of only two ounces and is provided with a flattened tip which the patient holds between the teeth. It has outside of that an enlargement like a washer. The patient closes the lips tightly on the tip, when the washer closes the mouth sufficiently so that the patient can get the benefit of inhalation with the air pressure employed. At the start the patient cannot stand as much air pressure as later. It is about twelve pounds at first and later twenty pounds.

I have him inhale two or three times, the lungs being filled to the utmost capacity. The lips serve as a safety valve to prevent the possibility of any injury from the pressure of the compressed air. I have not used this apparatus for the treatment of pulmonary tuberculosis, but only for the acute or catarrhal bronchitis so often associated with diseased conditions of the nose. Prior to the use of the nebulae, I have frequently had the patient inhale from the ordinary atomizer a little spray of eucalyptus or menthol. I have always had beneficial results from such practice.

Dr. Major H. Worthington: I have been interested in watching the development of this new apparatus, and the doctor is to be congratulated on the results he has obtained thus far. The treatment of respiratory diseases by medicated steam is not a new one, though it has been discarded to a great extent because of the fact that we were unable to control the temperature of the steam and regulate the amount of medicine the patient breathes without discomfort to him. Dr. Thomas has accomplished these two things with his apparatus. It has been proven that steam impregnated with medicine does not dilute the medicine used, to any appreciable extent, also that steam can be carried deeper into the lungs than the medicament could if lower than the body temperature. In addition to the experiments Dr. Thomas reports:

Demarquay, by the use of an inhalation of perchlorid of iron for which he afterward tested with cyanid of potassium, was able to show the presence of the inhalation in the vesicles of the lungs as Lewin also did in a lung cavity.

I think that Dr. Thomas' apparatus is quite a step in advance in the work done along this line, and I believe we will be able to get some good results from it as an adjunct in the treatment of respiratory diseases.

Dr. Thomas, closing: The next problem will be to work out the automatic control of the heat. We have too great a pressure of steam, and must too speedily reduce it with the compressed air and get too great a condensation. I hope I can get some automatic device, as on a water heater, and have the gas flame lowered or raised as demanded to secure an even and equable temperature. If we can do this, the effectiveness of the apparatus will be greatly improved, but it must always take a secondary position to general treatment. This apparatus is to be used only in the ambulatory cases.

BRONCHIAL ASTHMA *

JOSEPH M. PATTON, M.D.
CHICAGO

The term bronchial asthma, though in common use, seems unnecessary in so much as all asthmatic attacks consist essentially of bronchial manifestations of which the dyspnea is mainly a result, and even this has distinctive differences from other types of respiratory ataxia, which are a feature of the so-called symptomatic forms of asthma, such as cardiac or renal asthma. I use the term bronchial asthma in the present instance chiefly to identify the type of asthma whose treatment I wish to discuss from other types more evidently of reflex origin, in the sense that in the bronchial form there are conditions of the bronchial wall and mucosa which are an abiding factor in the induction and maintenance of the attack.

Asthma has the unique distinction of being a disease with no definite etiology, which may account for the fact that it was late in the history of medicine before it was accorded recognition as a distinct affection, though the modern theory that asthma is a neurosis is but a more complete elaboration of views held by a few observers over three hundred years ago.

Celsus used the term asthma to indicate a severe difficulty of breathing, dyspnea representing one, and orthopnea the other extreme of respiratory distress. Aretaeus applied the term asthma to states of orthopnea, while Galen discarded the term entirely. Van Helmont and Willis, in the seventeenth century, classified asthma as a distinct affection, the former calling it asthma spasmodicum. Darwin speaks of a convulsive type of asthma of epileptiform character and reflex origin, a forecast of the present views of West, Hutchinson, and others.

The nervous theory of asthma became lost about the beginning of the last century in the belief that asthma was merely symptomatic of other conditions, and the light thrown on accompanying lung conditions through the development of auscultation by Laennec naturally led farther away from the nervous theory for a time, Louis and others absolutely denying nervous causation for asthma. Rokitansky attributed asthma to the presence of emphysema, while Laennec himself emphasized the etiologic force of his *catarrhe sec.*

Ramadge, in 1835, believed the attack of asthma to be due to spasm of the bronchial tubes, a theory which originated with Floyer long before, and was adopted by Cullen and Laennec. Romberg also adopted this theory because of the discovery of muscle tissue in the bronchial wall by Rieseisen.

Since 1850 asthma has been regarded as an independent disease, and the direction of investigation has been toward explaining the cause of the spasm.

* Read before the Chicago Medical Society, Nov. 13, 1912.

The controversy over the ability of the bronchial tubes to contract, which continued some twenty years, developed the theory of Wintrich and Bamberger of spasm of the diaphragm and other respiratory muscles. Traube supported the theory of diaphragmatic spasm, while Budd, Jacoud and Germain Sec placed stress on spasm of the other inspiratory muscles.

About 1870 the experiments of Paul Bert led to a strong revival of the theory of bronchial spasm, but the difficulty of explaining all the symptoms of the attack on this ground led to the theory of Weber, that changes in the bronchial mucous membrane of vasomotor origin were to blame. This theory was adopted in part by Riegel.

In 1887 Germain See maintained that asthma was a neurosis of the respiratory center in the medulla resulting in spasm of the respiratory muscles and rigidity of the diaphragm. Experiments by Riegel and Elinger supported this view. Hughlings Jackson maintained that asthma is a respiratory convulsion of medullary origin. The influence of neurotic factors in the production of asthmatic attacks has even led to the theory that asthma is the manifestation of a psychosis.

Auer and Lewis claim that acute anaphylactic death may be due to stenosis of the bronchi from contraction of muscle fibers due to influences of peripheral rather than central origin. Gillette reported (to February, 1909) fifteen fatal cases from the use of horse serum, also thirteen severe general reactions. Of these eighteen had a history of asthmatic attacks, and nine of them died. In several of these subjects there was the history of asthmatic attacks brought on by proximity to horses.

Barach, of Pittsburgh, suggests that asthma may be due to conditions of anaphylactic origin, the introduction into the body of a strange protein to which the body is not immune; and Meltzer asks why we may not assume that asthmatics are individuals who are sensitized to a definite protein substance and that the asthmatic attack takes place when the same protein invades the body in the same manner.

Weaver suggests that sensitization can be produced in the omnivorous animal man by foods. If anaphylactin were demonstrated in the blood of an asthmatic, and animal experimentation was positive instead of negative so far, we would have to look on this as other than mere theory.

In the effort to fasten the cause of asthmatic attacks on the local bronchial conditions we may refer to Leyden's crystals, Curschmann's spirals and "bronchiolitis exudativa," Schmidthorn's spasm of the pulmonary arteries and Clark's transitory edema of the bronchial mucous membrane, likened to angioneurotic edema. All of these are insufficient, and may be at best but contributory causes. Crystals and spirals are at present considered, like eosinophilia, as mainly of diagnostic importance.

Since the introduction of the fluoroscope we have learned that limitation of diaphragmatic excursion has much less influence in the production of asthmatic dyspnea than Wintrich and his followers supposed.

Gibson states that typical asthmatic paroxysm can be produced experimentally through the action of muscarin, and that these attacks can be relieved by such sedatives as atropin, belladonna, morphin, or opium.

Aufrecht has shown that the musculature of the bronchioles consists of a strong circular layer and a weaker longitudinal layer. He assumes that an asthmatic spasm occurring in subjects with normal bronchial mucous membrane can be explained by reflex spasm of the circular muscles of the bronchioles which overcomes the normal force of the longitudinal layer. In those cases marked by catarrh of the bronchi the longitudinal layer of muscle suffers more from the inflammatory state than the circular layer, and the spasm is more due to relative overaction of the latter than to reflex spasm.

Fraenkel, whose views have caused much discussion in Europe relative to asthma, believes with Curschmann in both neurotic and inflammatory causes for the spasm, while he agrees with Biermer that all the characteristics of an asthmatic attack may be produced by bronchial muscle spasm, yet animal experimentation cannot uphold this as a sole cause for asthma in man because we cannot demonstrate a purely spastic attack in man, there being always some alteration in the bronchial mucous membrane. These bronchial changes may be sufficient in themselves to account for all the symptoms of the attack, but in view of the fact that they are not suddenly acquired, they do not suffice alone to explain either the precipitation of spasm or the exacerbation of a continuous dyspnea. Therefore we must invoke the influence of a neurosis.

That asthmatic attacks may be brought about by reflex impressions from almost any organized tissue of the body is amply proved by a superabundance of clinical material. The rhinologic tract has furnished a riotous confusion of cases in support of this fact.

Psychic trauma is, at times, apparently a factor in the precipitation of attacks of asthma, though Hoffman of Leipsic says that such an argument is used when "words are needed and knowledge is lacking." Nevertheless, the connection of shock, fright, or emotional excitement with the appearance of an asthmatic attack is difficult to disprove in occasional instances.

In individuals who have either an hereditary or acquired neurosis predisposing to asthmatic attacks, it may be impossible to demonstrate any bronchial factor before or after a paroxysm, but I believe such is always present; at least, I have never observed an attack that I believed could be classed as purely spastic in nature.

While I believe that asthma is essentially a neurosis, and that reflex influences from other territory than the bronchi are frequent factors in the precipitation of attacks, it is also my experience that the bronchial factors of congestion, swelling of the mucosa, secretion, and spasm are present in the majority of cases and account for the principal symptoms accompanying the spasm. In the majority of instances evidences of these conditions can be made out immediately before as well as after an attack even if the interval be not marked by signs of bronchiolitis. It is this class of cases that furnishes my excuse for using the term bronchial asthma.

The upper air passages with their highly vascular, erectile tissues for the purpose of warming air and arresting foreign matter; the large

bronchial tubes with rigid walls containing little muscle tissue; the small bronchi with relatively large amount of muscular tissue, contracting readily, possibly, as Watson Williams suggests, rhythmically with the nose, throat and larynx, and containing no cilia in the smallest tubes, which, as Grainger Stewart remarks, may explain why capillary bronchitis is more severe than inflammation of the larger tubes, furnish an association of mechanical conditions which, connected with the elaborate peripheral and central nervous mechanism formed by the central respiratory centers, efferent and afferent tracts, all under the control of the higher centers, and connected through centripetal tracts with, probably, every sensory nerve of the body, also with efferent tracts almost as widespread, which tracts involve, according to Gibson, the fifth, seventh, ninth, tenth, eleventh and twelfth cranial and spinal nerves; connecting these with certain nerves in the bronchial tubes which Brodie and Dixon have shown to have ability to dilate or contract these tubes, we have an associated mechanical and nervous mechanism which accounts for the production of the asthmatic spasm, however varied and extensive the individual etiologic factors may be in specific instances.

Whatever explanation we may place on the essential nature of asthma—peripheral, central, locally bronchial, physical, anaphylactic, or what not—we still have to face the above factors in the production of the spasm, and deal with them in our treatment of the same.

I will make no effort to cover the subject of the general treatment of asthma. It would involve much useless reiteration of familiar and speculative therapeutics. I wish, however, to speak of that numerous class of cases in which conditions in the air tract are responsible for the institution of the spasm as well as for the symptoms it presents.

Wilson, of Birmingham, suggests that the spasm of asthma may be compensatory to changes in the bronchial mucous membrane which interfere with ciliary action, and, therefore, may be of value to the patient. I am afraid the patient would be the last one to accept this reasoning and modify his demand for immediate relief.

The treatment of the attack depends, of course, on its severity. If very severe we are obliged to use such drugs as morphin, heroin, adrenalin, pyridin, chloroform, ether, or chloral. Morphin is in every respect the most useful of these, especially in elderly people with heart muscle of doubtful integrity. I believe it acts best when given without atropin. Adrenalin is very satisfactory in many instances. It should be given hypodermically. However, in those cases where chronic bronchial catarrh is present, the secondary effect of adrenalin is often very unpleasant, and the patient is made worse by the relaxation and swelling of the mucous membrane which follows its use. The inhalation of pyridin is often useful, and was preferred by See to morphin. In my experience it has not been satisfactory in cases with associated bronchial changes.

When the attack is not severe enough to demand the immediate relief afforded by the above drugs we may employ milder sedatives and antispasmodics such as stramonium, lobelia, belladonna, amyl nitrite, pilocarpin, nitroglycerin, and, if the heart is strong, ethyl iodid, the various

burning powders and sprays, which, to be effective, must contain cocain. Sprays are usually effective only in cases having irritation in the upper respiratory tract. Burning powders contain either stramonium, belladonna, lobelia, tobacco, opium, or a combination of these substances with nitre. They are useful in almost any type of asthma, and very effective in some instances.

The management of a case of asthma involves careful attention to the patient's manner of life, general hygiene, diet and climatic surroundings. Saundby, of Birmingham, naively remarks that if the cause can be found treatment is satisfactory, otherwise it is not.

The fact that in a certain percentage of cases the inciting factor in the attacks is an irritable focus in the nasal passages has led to very much unnecessary interference with this region. Rhinologic operations are often necessary and sometimes very effective, but there is, with the exception of gastro-enterostomy, probably no surgical field in which so much unnecessary operating has been done. Francis, of London, says that any vagal or sympathetic irritation may, under proper conditions, cause asthmatic reflex, and that the nose has a comparatively small share as a cause.

Brugelmann has called attention to other asthmogenous zones in the pharynx, tonsil and trachea. Local treatment of disturbances of these regions may prevent or relieve asthmatic attacks.

The endobronchial treatment of asthma has been tried with some success. On account of the spasm of the tubes it is difficult to introduce remedies suspended in the ordinary oil sprays. The direct injection of medicaments into the trachea, via the larynx, with the help of local or general anesthesia, has been used with more or less success. Freudenthal, of New York, reports favorably on this method. He injected from fifteen to twenty drops of adrenalin solution, or from five to ten drops of an emulsion of orthoform through a tube after using cocain to overcome obstruction. He attributes the results to the very free secretion expelled during treatment and afterward. The treatments were given weekly for a period of two months.

Ephraim reports some fifty odd cases of which nearly 50 per cent. were cured by a single endobronchial treatment. Very definite details of the nature of these cases would be necessary before we could form any conclusions as to the value of this method in ordinary bronchial asthma.

The trouble with any remedy introduced by either spray or tubes into the trachea is the difficulty of reaching the smaller bronchial tubes. Even if spasm of the tubes is a minor feature, the irregularities in the lumen of the tubes, which are often blocked with extremely viscid mucus, will be sufficient to interfere with the successful application of remedies through the trachea. Sedatives and antispasmodics may relieve an asthmatic spasm, or even mitigate a continuous dyspneic type of asthma, but they accomplish practically nothing in relief of the local state of the smaller bronchial tubes, which is often the main reason for the permanency of the asthmatic state. The difficulty of treatment is further added to by the presence of emphysematous conditions and circulatory weaknesses.

Climate, diet and general hygiene have an important relation to the general management of this class of asthmatic subjects. Special diet lists have been devised, but must be modified to suit individual cases. Gastro-intestinal irregularities have a distinct bearing on the frequency and duration of asthmatic spasms, but the chief therapeutic indication is relief of the bronchial catarrh, for as long as this persists the recurrence of an attack is only a matter of the appearance of some of the many spasm-producing factors which in the absence of local bronchial changes are not sufficient to induce an attack.

If we refer to the topography of bronchitis in non-asthmatic subjects, we remember that while bronchitis of the larger tubes is amenable to the stimulating expectorants, such as ammonia preparations, these remedies have little or no effect when the smallest tubes are alone involved. In the latter case the best effects are obtained from remedies which are slowly eliminated by the bronchial mucous membrane, and have an alterative action on the secretory structures of this tissue. It is because it has peculiar virtue in this respect that iodine has obtained a universal reputation in the treatment of asthma. Many of the medicaments of special value in the treatment of asthma hold their ground first, by virtue of their iodine content; and, second, by reason of their facility of absorption by the gastro-intestinal tract. In the latter respect sodium iodide has an advantage over the potassium salt, and some of the newer preparations of iodine may even surpass both of them in individual instances.

Superior advantage has been claimed for the intramuscular injection of iodine because of quicker effects and ability to administer larger doses. I have used iodized oil of sesame for this purpose, but aside from those subjects which have idiosyncrasy to the oral administration of iodine preparations, I can see no special benefit in the injection method. The continuous administration of iodine over a period of six or eight months, in doses that will not disturb the patient, is necessary in order to obtain the best results.

Arsenic is a very useful remedy in asthma. In the form of arsenical cigarettes it is at times very effective in mitigating or preventing attacks.

Grindelia robusta and *euphorbia pilulifera* are of considerable value for continuous use in connection with iodides. *Stramonium*, *belladonna* and *lobelia* are of most service for the relief of threatened spasm. A pill containing one-half grain of ext. of *belladonna*, one-third grain of ext. of *stramonium* and two and one-half grains of *conium*, given at bed-time is often of value in preventing nocturnal attacks of asthma.

Quebracho is a drug which has been called the "digitalis of the lungs." It has been used for various forms of dyspnea, and is a stomachic tonic. In over-doses it is said to produce dyspnea and asphyxia. The fluid extract and tincture of the drug have not been regular or effective in their action, and have been comparatively little used.

Recently I have used the active principle of *quebracho*, *aspidospermin*, with some rather remarkable results. The market affords an amorphous form of *aspidospermin*, also a hydrochlorid. The dose of the former is

from one to two grains, and of the latter from one-half to one grain. I have so far used only the amorphous form.

The effect of this remedy has been very satisfactory in those cases in which there was a very evident bronchial factor in the maintenance of the asthmatic state. Even with the presence of marked emphysema and a weak heart, the relief obtained was marked and lasting.

One patient, a man, had suffered from asthma for thirty years. There were areas of bronchial irritation in both lungs, one of which, in the lower right lobe, anteriorly, refused to clear up under any kind of treatment, dietetic, climatic, sedative, antispasmodic, or iodids by mouth or by injection. He was steadily getting worse. Adrenalin relieved the spasm, but secondarily increased the bronchial distress. Morphin was the only thing that gave relief, and the use of this drug became necessary once in from twenty-four to thirty-six hours. Aspidospermin gave him immediate relief in preventing the return of spasm, and, by the daily use of from one to three doses complete relief of both asthmatic spasm and bronchial difficulty was obtained.

CARCINOMA OF THE UTERUS IN THE NON-PREGNANT AND PREGNANT

A. BELCHAM KEYES, M.D.

Assistant Professor of Gynecology, Rush Medical College (in affiliation with the University of Chicago); Professor of Gynecology, Chicago Policlinic; Gynecologist to the Presbyterian, Policlinic, Henrotin Memorial, Chicago Maternity, Evangelical Deaconess Hospital, and Surgeon to Cook County Hospital, Chicago; Surgeon Reserve Medical Corps, United States Army

CHICAGO, ILL.

The importance of the careful clinical consideration of carcinoma uteri can be well understood when one remembers that it is estimated that, in Great Britain one in thirty-five of all women over 35 years of age die of uterine carcinoma (Webster).

Even though there may not be more than subjective clinical data on which to base most of these cases (the only true objective diagnosis being the microscopical), they yet can be accepted as approximately correct if we remember that 6 per cent. of women applying at the Greifswald clinic had carcinoma (Martin) and 3 per cent. at Chrobak's clinic in Vienna.

If the much greater frequency of carcinoma in women is as stated (three in women to one in men) largely due to the very great frequency of uterine and mammary carcinomata, it must not be forgotten that adenoma, sarcoma and chorio-epithelioma malignum uteri cause subjective symptoms which are much the same as carcinoma, as indeed do the benign polypus and submucous fibroma. Further consultation of the figures shows that, of the women dying of carcinoma, nearly one-third had uterine and nearly one-sixth mammary carcinoma. This is supported by the fact that in Stuttgart 28 per cent. of all the carcinomata in women were uterine carcinomata (Fehling).

THE ETIOLOGY OF CARCINOMA UTERI

1. *Hereditary influences* are difficult to estimate; probably they act in many ways as favoring factors. In all cases of consanguinity we must not forget the fact that the relatives are liable to be more frequently in close contact with the disease, and often suffer poor health in consequence, and are therefore perhaps more liable later to develop carcinoma.

The Cohnheim theory of misplaced embryonal cells that later, due to a lack of inhibition, or to some unknown stimulus, become active and develop into heterologous tumors, is as irrefutable to-day as on the day of its invention.

Hauser and Hansemann's idea that carcinomata are possibly due to some changes in the normal epithelial cell condition by which it takes on unrestricted multiplication and anaplasia is, considering our knowledge microscopically of erosions, endo-cervicitides and glandular endometritides and adenomatous changes, deserving of serious consideration.

One might also apply here the lysin theory that is so intimately identified with chorio-epithelioma malignum and say that when certain anti-bodies or lysins are at a low ebb in the woman's circulation that such a woman with or without a uterine Cohnheim embryonal deposit or a Hauser and Hansemann's hyperplasia, is liable to develop a carcinoma. The transplantation experiments made with carcinoma cells without result on non-carcinomatous patients prove nothing; while the metastatic and implantation growths in carcinoma patients, in a measure support this lysin theory. Bacteriologic causative factors if still unproven are very possible. The experiments with carcinomatous growths and sera on animals do not come within the scope of this clinical paper.

2. *Age.* In reckoning by decades we must always remember that the frequency is greatest towards the end of each decade. Schauta saw carcinoma uteri in a girl aged 17, and Fraenkel in one at 19 years of age. Gusserow in 2,265 cases found .01 per cent. were in women under 20 years, 3.5 per cent. between 20 and 30 years (Kuestner, 2 per cent. under 30), 21 per cent. between 30 and 40 years and 34 per cent. just before, at or after the climateric, viz., between 40 and 50 years of age. Between 50 and 60 years of age only 26 per cent.; between 60 and 70 years of age only 11 per cent., and after 70 years of age only 3.5 per cent. of the cases occurred. As there are fewer women living after 60 years of age it makes the frequency in advanced age appear less than it really is.

3. *Sexual intercourse, fecundity and the sequelæ of labor* seem to have a marked influence. In Vienna of 1,000 women with uterine carcinoma, 299 were single, 503 married, and 268 widows; but no unusually great tendency to develop carcinoma is for some reason shown by prostitutes (Glatter). Williams' statement that lues does not predispose to carcinoma is supported by Lomer and denied by August Martin. The average number of term births was 5.02 each (Hofmeier). In a large number of cases the women were overdue; i. e., had carried their children in utero more than the allotted 280 days (Saunders). The writer has also noticed the fact that the pregnancies often followed one another

rapidly, with only a short non-pregnant interval. In the nulliparous only 5 per cent. had carcinoma, especially in the corpus, while parous women formed 95 per cent. of Schroeder's carcinoma cases. The violent traumata during spontaneous or instrumental labor, with the attendant lacerations of the cervix, that occur to some extent in even the best managed cases, and often heal imperfectly, leaving a very patent external os, or indeed gaping cervix allowing the easy ingress of low-grade inflammation, and hyperplasia excitants, probably is an important predisposing factor.

4. *Neglected acute inflammations becoming chronic, e. g.,* chronic endocervical catarrh of long duration is probably often followed by endocervical carcinoma (Schroeder). Cases of carcinoma endo-cervicis under treatment for months for a supposed catarrhal inflammation occur in the experience of every gynecologist. That poverty, under-nourishment, and unhygienic housing predispose to uterine carcinoma, is very probable. In Schroeder's public clinic 3.6 per cent., and in his private practice 2.2 per cent. of the women had carcinoma. Worry and depressed spirits were suggested as predisposing factors by Scanzoni.

Carcinoma of the uterus may be divided into three kinds as to their locus primæ originis: carcinoma of the portio vaginalis cervicis; carcinoma of the endocervix uteri, and carcinoma of the corpus uteri.

If the site of origin of a uterine carcinoma can usually be recognized in the very early stages, in the advanced stages it is often impossible to do so either macroscopically or microscopically.

CARCINOMA PORTIO VAGINALIS UTERI

This carcinoma is estimated to occur on an average at about 42 years of age on that portion of the cervix which hangs free in the vagina and is normally lined externally by many layers of squamous vaginal-like epithelium. The portio vaginalis carcinoma takes its origin from the superficial squamous epithelium of the portio vaginalis or from the epithelium at the transitions place.

The connective tissue of the portio may take on very active growth, squamous cell-lined papillary growths may protrude from the portio surface into the vagina, hanging from one lip of the cervix papilloma-like, or as a broad globular swelling, sometimes hiding the healthy lip, or indeed both the lips of the cervix may be involved. In other cases the portio carcinoma proceeds from a very small area of origin and grows directly deeply into the portio vaginalis, followed by an early cell necrosis and loss of superficial substance, the so-called (often deep) carcinoma ulcer, which may even undermine the whole portio circularly.

The spreading of the portio vaginalis carcinoma is usually downwards invading the vaginal mucous membrane and but comparatively rarely upwards invading the cylindrical cell-lined endocervix. The vaginocervical junction, and the whole upper part of the vagina, may be involved by this secondary vaginal carcinoma, which, in some cases, may even extend down as far as the introitus vaginae. This tendency of carcinoma cells to more easily invade by continuity an area covered by

like cells to those from which it was derived, i. e., the portio vaginalis squamous celled carcinoma to invade the squamous cell-lined vaginal wall, seems almost as if the cells of a different character in an adjoining area had the power to a certain extent to temporarily resist the invasion of carcinomata derived from cells of another type. As the portio vaginalis uteri carcinoma penetrates deeper into the cervical substance it may relatively early spread upwards under the external longitudinal muscular layer of the uterus to the corpus uteri (see Fig. 1). In two out of nine of these cases examined microscopically it had passed above the level of the internal os (Seelig). The invasion of the paracervical and paravaginal connective tissue by the portio carcinoma will be taken up with the paracervix and parametric invasion by the endocervical carcinoma.

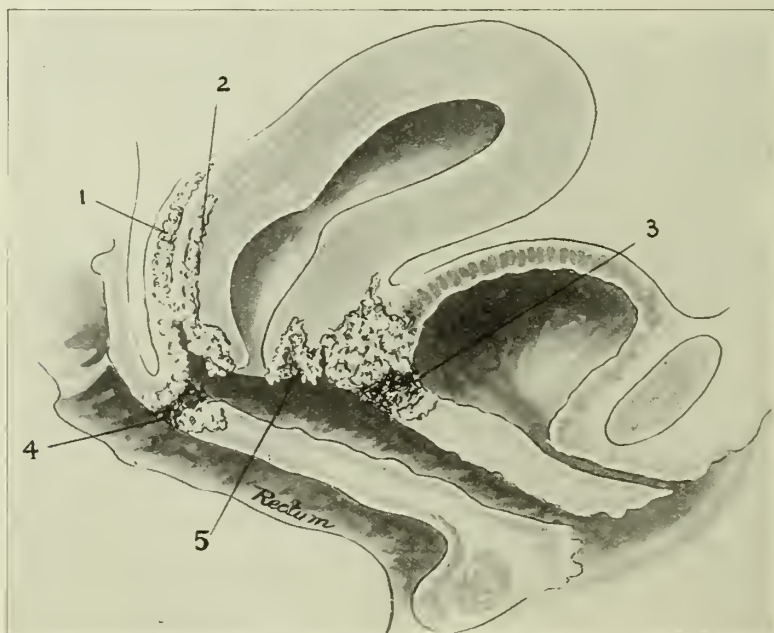


Fig. 1.—Carcinoma of the portio vaginalis uteri. (1) Invasion of parametrium. (2) Traveling upward to corpus uteri. (3) Para-cystium invasion and vesicovaginal fistula. (4) Para-proctium invasion and proctovaginal fistula. (5) Carcinoma ulcer of portio with extension by continuity onto the vagina.

CARCINOMA ENDOCERVICIS UTERI

This cylindrical cell carcinoma is said by Winckel to occur at an average age of about 47 years. It begins in either the superficial cylindrical endocervical epithelium or from the cylindrical epithelium of the mucous glands of the endocervix. The cylindrical cell carcinoma from the superficial mucosa may spread superficially and also deeply and penetrate to the submucosa and spread rapidly upward toward and invade the corpus by the submucous connective tissue. There is apparently less tendency at least at first to spread downwards onto the

squamous cell covered portio vaginalis. In some cases the endocervical carcinoma is characterized by the dipping into the cervix of solid tap-like processes similar to those of the portio carcinoma. The endocervical cylindrical epithelium may lose its cylindrical shape and become flat epithelium, in which event necrosis and ulcerations are very liable to be marked, often much enlarging the endocervical cavity. In other cases the carcinomatous growths may fill the cavity of the endocervix and if there be gaping due to old lacerations, it may appear at first sight through the speculum much like a papillary portio vaginalis carcinoma.

Carcinomata originating deeply in the mucous glands of the endocervix may occur as a small sharply circumscribed hard tumor often deeply situated in the wall of the cervix. Later it may enlarge to an unsightly tumor and infiltrate the whole thickness of the cervix, and indeed invade the parametrium before necrosis and ulceration through on to the endocervical mucosa has occurred. The corpus uteri may later be invaded via the submucosa as in the carcinoma originating in the superficial mucosa. If the external os be narrow there may, at least at first, be nothing in the appearance on inspection through the speculum of the often normal appearing portio vaginalis to indicate the exuberant malignant growth, or wide-spread ulcerative destruction within the cervical canal. In other cases a low situated circumscribed intra-mural endocervical carcinoma on undergoing necrosis may early rupture through onto the portio vaginalis surface and be mistaken for a primary portio carcinoma ulcer.

Both the portio vaginalis carcinoma and the endocervical carcinoma invade the paracervical and parametric tissues early. The portio carcinoma can by an early breaking through the vaginal wall invade the paravaginum. Foci of carcinoma cells from either the portio or endocervical carcinoma often appear early in the vesico-uterine ligament anteriorly and recto-uterine ligament posteriorly by metastases via the lymph-channels or by direct carcinomatous infiltration of the connective tissue spaces. This carcinomatous infiltration of the paracervical tissue is often irregular, but may, especially in carcinomata of endocervical origin, be so regularly and evenly distributed as to give the sensation to the examining finger of a colossal large and hard cervix. The ureter may be so surrounded and compressed by the paracervix invading carcinoma as to cause hydronephrosis.

The ureter wall itself apparently withstands invasion by carcinoma cells for a considerable time, the lumen sometimes later again becoming patent if softening of the paracervical carcinoma cells takes place.

Infiltration necrosis and rupture through, with the formation of ureter fistula can ultimately occur; indeed many of the postoperative ureteral atresiae and fistulae, for which the surgeon is wrongly blamed, are due to this. In a young woman, aged 37 (on whom a hysterectomy for carcinoma had been performed one year previously), operated on by Dr. Arthur M. Bishop at the Passavant Hospital for a kidney tumor, the operation revealed a hydronephrosis, the loose paranephritic tissue was filled with hard masses which when examined microscopically by Dr.

Evarts Graham proved to be carcinoma metastases. Fritsch emphasizes the fact of the malignancy being especially marked in young women.

At autopsies all too little attention is given to exploring the preperitoneal tissue and retroperitoneal tissue for evidences of carcinomatous invasion, though it is common in very advanced cases to find clinically, hard masses (probably carcinoma) in the anterior abdominal wall.

The paraeystic invasion is followed later by invasion of the musculature of the bladder by the carcinoma cells which may gradually encroach on the vesical mucosa displacing it inwards and causing a (catarrhal like) endocystitis. Later carcinomatous infiltration and necrosis of the entire thickness of both the bladder and vaginal wall may result in vesicovaginal fistula.

Rectovaginal fistulae though more rare are either due to carcinomatous invasion first of the vaginal wall and then infiltration and rupture directly through into the rectum, or the carcinoma cells having first invaded the posterior paracervix and paravaginum, later infiltrate, followed by necrosis and rupture both anteriorly through the vaginal and posteriorly through the rectal wall. In 79 cases Eppinger saw 20 per cent. vesicovaginal and 4 per cent. rectovaginal fistulae. The pelvic peritoneum may be gradually implicated from the parametric foci. Adhesions may form early and temporarily wall off the carcinoma invaded area from the general peritoneal cavity. Douglas' sac may gradually become obliterated or walled in by adhesions or the whole pelvic contents become one carcinoma-cell infiltrated adherent mass extending as high as the umbilicus.

The insidious onset of ascites (in the absence of renal, hepatic or cardiac, or other peritoneal, e. g., tuberculosis lesion) in a case apparently successfully operated on for uterine carcinoma some months previously, is always a suspicious sign of peritoneal and omental invasion. In one such case which had been diagnosed as typhoid, the writer was easily able to palpate the carcinomatous growths in the omentum, despite the ascites. The diagnosis was confirmed postmortem.

Spreading of the carcinoma from the parametric connective tissue to the muscles, periosteum and bones of the pelvis can occur in advanced cases. The destruction of the pelvic organs may become so great that only a single opening remains into which the bladder, uterus and rectum empty, the so-called pathologic cloaca. Every trace of the uterus may become lost before the destruction has reached the degree described above. Winter's conclusion that the retroperitoneal glands were only involved after the carcinoma had broken into the parametrium is questionable. Metastases may also occur in the ovaries, liver, lungs and other distant organs.

CARCINOMA CORPUS UTERI

Carcinomata occurred in the corpus in 3.4 per cent. in 812 cases (Hofmeier), and in 6.3 per cent. in 848 cases (Krukenburg), while in Wuerzburg it occurred in nearly 13 per cent. of 251 cases.

Carcinoma originating in the corpus occurs but rarely between 30 and 40 years of age and only occasionally between 40 and 50. The

majority of cases being between 50 and 60, average about 54 years (Winckel).

Insufficient or lack of physiologic activity apparently favors the occurrence of corpus carcinoma, as old nulliparae composed 21 per cent. of the cases and only 3.6 per cent. were multiparae, entirely refuting the idea that fecundity is a predisposing cause.

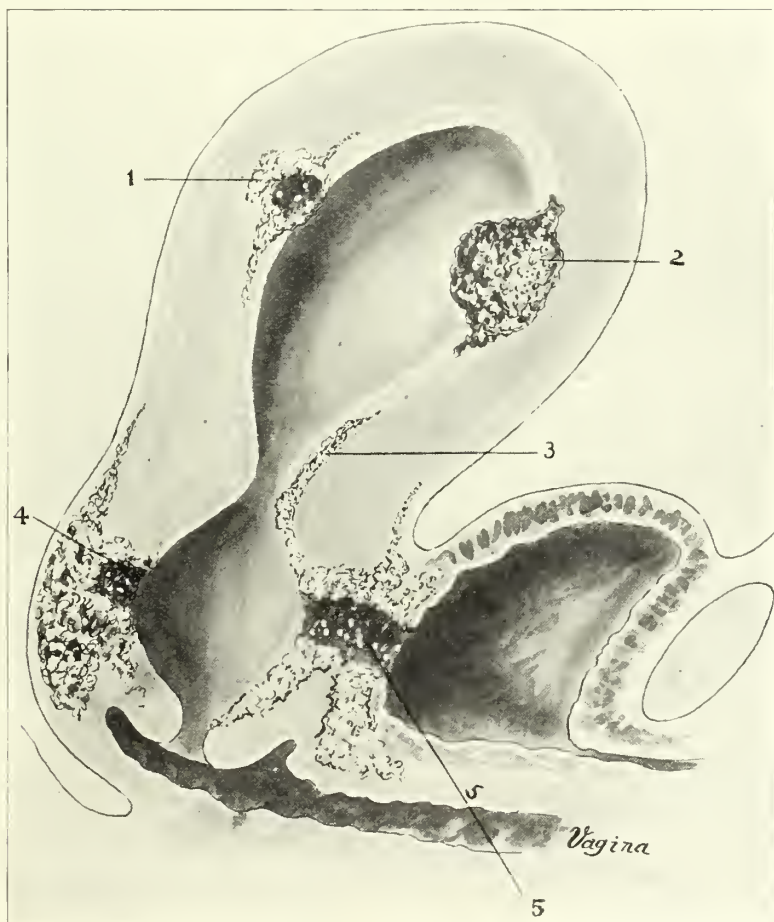


Fig. 2.—Carcinoma of corpus uteri. (1) Carcinoma ulcer with gradual invasion of the musculature and extension downward under the mucosa. (2) Carcinomatous growth extending superficially and protruding into the uterine cavity. Carcinoma of the endocervix uteri. (3) Carcinomatous extension upward underneath the mucosa. (4) Carcinomatous ulceration and invasion of the musculature and parametrium. (5) Carcinomatous invasion superficially and deeply anteriorly with cervicovesical fistula.

The site of origin of the corpus carcinoma may be in the corpus glands or the new formed glandular hyperplasias, though the cylindrical epithelium of previously normal appearing glands can proliferate to such a degree that the whole gland lumen may become filled, giving an alveolar carcinomatous formation, with later rupture through the basement membrane.

Necrosis and rupture into the cavity of the corpus uteri and the formation of the carcinoma ulcer occurs as in the endocervical variety. The enigmatical endometritides glandularis hyperplastica that give us the saw, corkscrew and other bizarre forms, in some cases perhaps later develop into the adenoma malignum destruens, perhaps also become carcinomatous as pointed out by Hauser and Hanseemann.

The superficial endometrium of the corpus may also be the site of origin of carcinoma and spreading occur superficially as well as down deeply into the muscular wall of the uterus. In rare cases the superficial surface of the mucosa of the corpus uteri may become more or less covered by flat squamous epithelium (ichthyosis endometrii). Such cases are very prone to become carcinomatous with an early dipping destructively into the musculature, which seems to be very characteristic of this type (Teller). Carcinomatous growths in the corpus endometrium like those in the endo-cervix occasionally protrude into the uterine cavity either as a broad based polyp or more frequently as a diffuse infiltration of the mucous membrane, especially just previous to the necrosis and ulceration. The corpus carcinoma may little by little also invade the cervix. The uterine corpus wall becomes gradually destroyed by the progressive infiltration and necrosis of the carcinoma cells, but the destruction of the corpus muscle substance is comparatively slow, due to the energetic resistance of the muscular tissue itself and the peculiar division of the corpus lymph vessels, which in their nulliparous undeveloped, or senile atrophied condition seem to be somewhat unfavorable to the rapid invasion by carcinoma cells. Even voluminous growths are occasionally seen apparently still limited to the uterine wall though the carcinoma had probably existed a year or longer. Gradually, however, the carcinoma cells usually perforate the musculature, push up and later pass through the *overlying uterine peritoneum*, when adhesions circumscribing the advancing tumor cells may temporarily wall off the general peritoneal cavity, or the onset of free ascites be the first symptom of a metastatic invasion of the peritoneum and omentum. General diffuse peritonitis and death from defective circumscription is always possible if infection occurs, which is surprisingly infrequent when one considers the close proximity and indeed implication of the intestines.

The subjective symptoms of portio vaginalis, endocervical and corpus uteri carcinoma are usually entirely absent at the very onset of the disease.

1. *Hemorrhage* in the early stages of a circumscribed glandular intramural carcinoma focus, may be absent till the carcinoma either approaches or reaches the surface, or actual necrosis and ulceration of the mucosa occurs. Bleeding probably occurs earlier in the superficial carcinoma. Clinically spontaneous hemorrhage should be considered a sign of relatively advanced disease. More than the usual loss of blood at the period (menorrhagia) in a woman, especially between 35 and 40 years of age or older, in the absence of any other apparent cause, e. g., abortion or fibroid, or hemorrhage between the periods (metrorrhagia) due to trauma, e. g., coitus, digital examination, sounding, or spontane-

ously, however slight, demands immediate bimanual examination, inspection, curettage and exsection, for microscopic examination. While not every woman with whom the classical lessening of the number of days and quantity of the menses does not occur as she nears the average climacteric (age of 45) has carcinoma, yet diagnostic means should always be resorted to, to make a correct diagnosis of the actual condition present. After the normal climacteric or menopause, the reappearance of uterine hemorrhage is almost pathognomonic of carcinoma, except in rare cases. I have in my records one of these very exceptional cases who is still alive and well, Mrs. D. G., aged 59, multipara; widow, passed climacteric fifteen years ago, bleeding continuously for the past nine weeks, curettage, microscopic examination by Max Herzog, negative. Patient is in good health to-day at 69. No sign of bleeding has occurred since the curetage for diagnosis.

2. *Odor* may be absent for months after metrorrhagia begins, or if present, be unnoticed by the patient herself, but when necrosis and decomposition set in, the odor usually becomes very marked, and the discharge of dark gray, yellow, green, brown or black shreds, detritus and blood from the necrotic ulcerated surface occurs.

3. *Pain* from the carcinoma at least at first can be entirely absent, or at most only a slight sacral pain or feeling of pressure in the pelvis. As the carcinoma invades the parametrium with the often added small cell infiltration of decomposition and pus infection of the ulcer it may be very severe. The more violent the harder the growth, yet occasionally undoubted cases which refuse operation, go years with but little pain. In one case an apparently small growth may be accompanied by more pain than a larger growth in another. Carcinomata that ulcerate late and others that ulcerate early may be equally painful. Lastly the pain can be from some other cause as well as the carcinoma, e. g., the adhesions from old inflammatory foci. Intermittent uterine colic due to uterine contractions consequent on carcinomatous stenosis of the internal os and cervical canal and mechanical interference with the free discharge or atresia with complete retention of the intra-uterine secretion is common. This pathologic gynatresia in corpus carcinomata often accounts for the temporary cessation of the hemorrhage and unfortunate neglect of diagnostic proceedings.

Distention of the uterus (hydro-hemato-pyo-physo-metra) to the size of the pregnant uterus at the fourth month or even larger is usually followed later by painful uterine contractions, rupture of the obstructing carcinomatous tissue and discharge of the foul-smelling uterine contents. An interesting ease of this kind caused the patients and friends to refuse to believe the writer's diagnosis till the rupture occurred months later. Peritonitic pain and irritation with increased rigidity of the abdominal wall and even vomiting may occur when the carcinoma reaches the peritoneum.

4. *Metastases.* *The invasion of the neighboring pelvic organs* is very important to recognize clinically as a contra-indication to the performance of a radical operation, e. g., the dysuria and strangury and

cystitis indicating invasion of the bladder wall and the paraproctium and rectal wall invasion by pain or tenesmal diarrhea. The vesico-vaginal and recto-vaginal fistulae when present are very obvious and distressing.

5. *The cachexia* often sets in only very late in the disease; indeed, patients with comparatively advanced carcinoma often show neither loss of weight nor anemia, causing the doctor himself to doubt the possibility of carcinoma and to lose valuable time administering ergot, hydrastis and local treatments. Later, the toxins from the carcinoma tissue itself, from the decomposing necrotic tissue, saprophytic, and often pus infection, at the site of the ulceration, the loss of blood and anemia, the anorexia, disturbances of digestion, and the formation of intestinal toxins, loss of weight, pain and loss of sleep, soon accentuate the characteristic condition.

The dullness of intellect, or indeed, soporose condition, which is common in the later stages of carcinoma, due partly to the toxins and partly perhaps to the oft present uremia consequent on ureteral pressure, and perhaps contracted kidney common at this age, or other causes, probably mercifully lessens the patient's suffering. In the last stages the characteristic anxious facial expression leaves, the patient replies but indifferently to questions, giving only short answers, as she gradually dies of marasmus, often in coma; if no intercurrent disease or embolism happily ends the life sooner.

THE DIAGNOSIS

In the portio vaginalis hard foci or a general hardness is always a suspicious sign near or at the climacteric age, but we cannot afford to forget that the especially malignant cases in the early thirties or indeed before then, are still more liable to be overlooked than those at the climacteric. Shaggy or irregular portio growths are very liable to be carcinomatous, even if they do not bleed easily to the touch. In further advanced cases the portio carcinoma may have a sharp outline, be polypoid or ulcerated and bleed spontaneously or indeed be easily made to bleed by the examining finger. The so-called characteristics of the simple ulcer, erosions, true chancre, syphilitic, tubercular and carcinoma ulcer are as idle to relate as are the simple mucous, fibroid, adenomatous, sarcomatous and carcinomatous polyp in this microscopic age.

Inspection in portio vaginalis carcinoma by speculum may reveal the irregularity or shaggy growth or ulceration, but it is also always possible that a circumscribed focus hard to touch, can lie deep in the portio which is entirely unchanged in appearance.

The endocervix with an early superficial intra-cervical carcinoma may give the same subjective symptoms as a catarrhal inflammation and may not give the sensation to touch of hardness and thickness of the cervix. By squeezing the cervix with the examining fingers one can often elicit bleeding or the introduction of an aseptic sound into the cervix may reveal an exuberant growth or increased roominess and bleeding both. In both the endocervical and portio carcinomata before the menopause, pregnancy can be easily overlooked if there be spontaneous hemorrhage,

but an increased softness of one part of the cervix and a hard focus in another should always cause suspicion of pregnancy and carcinoma.

Lastly, the advanced intra-cervical carcinoma may often give the sensation to the examining finger of a very large and hard cervix, but not change the portio in any way whatever in appearance through the speculum, unless lacerations and gaping of the cervix should allow the carcinoma ulcer to be seen, or if exuberant, to protrude from the external os. By a speculum inspection alone one may be entirely thrown off one's guard in very advanced endocervical cases.

Corpus carcinomata may give either local or general increase of hardness and increase in size of the uterine body, though in the early stages both of these may be impossible to elicit. The menorrhagia or metrorrhagia often being the only suspicious sign.

Thorough curettage and exsection of shaggy or hard foci from the cervix, should always be followed by a careful hardening, staining and microscopical examination by a competent pathologist in every case and especially so when suspecting malignancy. Those who do not happen to have laboratory facilities or the time, can by placing their scrapings, etc., in alcohol, and securely corking, mail in a regular mailing carton to any good laboratory. If the scrapings from both the cervix and body and the exsection be reported non-malignant, and the menorrhagia or metrorrhagia subside, then is there the satisfaction of having done one's full duty.

If the hemorrhage continues it points to the possibility of a small superficial carcinoma or a focus deep in the uterine wall; e. g., originating in a gland having escaped the curette; or that the hemorrhage is from another cause, e. g., submucous fibroids. The continuance of hemorrhage despite the negative curettage, demands immediate hysterectomy in the absence of any contra-indication either systemic or metastatic.

The prognosis, prophylaxis and treatment of carcinoma uteri depends on the very early microscopic diagnosis of all uterine lesions and immediate operation if carcinoma be present.

A hysterectomy performed while the entire carcinoma is still entirely within the wall of the portio vaginalis or of the supra-vaginal cervix or of the corpus, will give a good prognosis.

1. If it has invaded the paracervical or parametric cellular tissue to any degree and metastases have occurred in distant lymphatic glands, then is it impossible to remove all of the carcinoma by hysterectomy, even though all the involved retro-peritoneal glands should be also removed, which is improbable; the paracellular tissue would probably still contain carcinoma cells. Slight carcinoma cell infiltration of the parametrium and paracervix is impossible to diagnose.

2. The uterine mobility, i. e., the ability to move the uterus freely from side to side and to draw it down by the volsellum attached to the cervix, till the portio is at the vaginal introitus is only of relative value as a sign of parametric freedom from carcinoma.

Old peritonitic adhesions or old parametric inflammatory induration may be present concomitantly with a carcinoma that is still only in the

wall of the cervix and the limitation of mobility cause hesitation when conditions were really favorable for operation.

An early superficial ulcerated, saphrophytic and pyogenic infected carcinoma, with the attendant small cell infiltration, appears clinically to



Fig. 3.—Uterine scrapings drawn from actual slides by the author, giving a slight idea of the variety of uterine contents and endometric changes, the nature of which can only be diagnosed microscopically.

be further advanced, and may fix the uterus parametrically by the inflammatory infiltration, when the carcinoma itself has not yet invaded the parametrium or at least only very slightly so.

If one may judge by analogy the writer in one case of intestinal obstruction made the diagnosis of sigmoid carcinoma microscopically from the removed sacral glands, though the mesentery was clinically devoid of infiltration; later in Cook County Hospital in a like case apparently much further advanced the writer found no sign of enlarged glands.

In all cases of rectal and vesical implication by carcinoma uteri (signs of which are above described), radical operation is to be proscribed.

Lastly, slight limitation of mobility due to carcinoma cell infiltration of the parametrium might easily escape notice by the most experienced, also metastases in the retroperitoneal iliac lymphatic glands are impossible to diagnose and may have occurred even though the parametrium still be free.

Poirier states that the inguinal lymphatic glands drain the vulva and lower one-third of the vagina and also the cornua uteri via the ligamentum teres. The iliac glands which lie at the bifurcation of the external iliac and hypogastric arteries drain the upper third of the vagina and cervix.

The lumbar lymphatic glands near the lower edge of the kidney drain the corpus and fundus uteri, except the cornuæ, via the lymph channels along the spermatic artery.

Prophylactically, what relation Neisser's gonorrheal or puerperal infections have to the cause of carcinoma uteri is difficult to say; but we do know that especially gonorrhea plays a considerable rôle in the etiology of the glandular endometritides of the chronic hyperplastic type, and, that it in advanced stages, results in all kinds of bizarre forms often passing to a "near" adenomatous stage, that should prompt gynecologists to consider carefully the prophylactic treatment of all inflammations and their sequelæ, and an intimate knowledge of the hyperplasiæ of the endometric glands certainly incline one to favor the much maligned curettage and intra-uterine antiseptic packing as well as the careful examination microscopically of the small or large amount of the scrapings, however innocent in appearance macroscopically.

The careful repair of all cervical and perineal lacerations, especially when nearing the climacteric, should also be the aim of all practitioners and thereby endeavor to avoid the easy ingress of the non-specific infections, which also lead to catarrhal inflammations, erosions, and other hyperplasiæ that may possibly become malignant. If carcinoma is diagnosed early enough then total hysterectomy either by laparotomy, or per vagina or by both, with removal of as much of the broad ligament as possible and the sacral glands.

The preparation of the patient should always be made both vaginally and abdominally in every case whichever operation is intended, so that, in case of need of the other route there is but little delay. Freund's total uterine extirpation by laparotomy did not at once become popular because of the fear of infecting the abdominal cavity. It certainly gives a chance to control the hemorrhage and oversee the operation's field.

Hysterectomy should always be preceded by a thorough curettage and cauterization, and if possible, suturing of the antiseptically prepared cervix to avoid contamination of the operation's field with the malignant and often septic discharge.

Rydgier first divides the vaginal mucosa then does the laparotomy. Veit advised Freund's operation via the abdomen and then, when the broad ligament is ligated and divided, pulls down the uterus and finishes the rest of the operation per the vagina.

An endeavor should always be made to remove as much of the broad ligament as possible, the "crux" being at the cervix where we not only have greater danger of the metastases having involved the paracervix tissue, but we also have to "hug" the cervix to avoid the ureters, which avoidance can be better supervised from above. Vaginal hysterectomy that hitherto has been the popular operation, really is not so much less dangerous than the abdominal route is, in these days of improved technic in laparotomies and Fowler's post-operation position. Vaginal hysterectomy is also often very difficult through narrow nulliparous or senile atrophic vaginae and it is often impossible to avoid carrying infection from the cervix into the pelvic peritoneal cavity during the manipulations to bring the uterus down.

The palliative treatment for inoperable cases is to limit the hemorrhage and by the judicious use of antiseptics avoid infection and decomposition as much as possible, with opiates for pain. Curettage in very advanced cases should be done very carefully, and then only in selected cases; always avoiding perforations through into the bladder, peritoneum or even rectum.

CARCINOMA UTERI IN PREGNANCY AND LABOR

1. *Carcinoma of the Corpus Uteri in Pregnancy.*—Pregnancy in a corpus carcinomatous uterus is comparatively rare because carcinoma here is most frequent years after the climacteric or menopause. In corpus carcinoma cases, before the menopause, the general weakening of the whole organism of the woman and the local carcinomatous changes in the corpus endometrium apparently have an inhibitory influence. If the corpus carcinoma involves the whole endometrium of the body of the uterus total sterility as a result would naturally be expected. If the endometric focus is still very small and conception does occur on the still healthy portion of the endometrium the pregnancy may only last one or two months. The cases that continue longer than this are questionable. (Sarvey and Theilhaber.)

2. *Carcinoma in the Endo-Cervix and Portio-Vaginalis in Pregnancy.*—The tumor here, if most frequent near or at the climacteric, is yet common in the early thirties. That a woman already has a carcinoma and then becomes pregnant is considered the more frequent. In such cases there is usually a well-developed carcinoma present in very early pregnancy. If the pregnancy is far advanced and the carcinoma of the cervix is very small, the natural inference is that the carcinoma probably developed during the pregnancy. The two points to consider are the

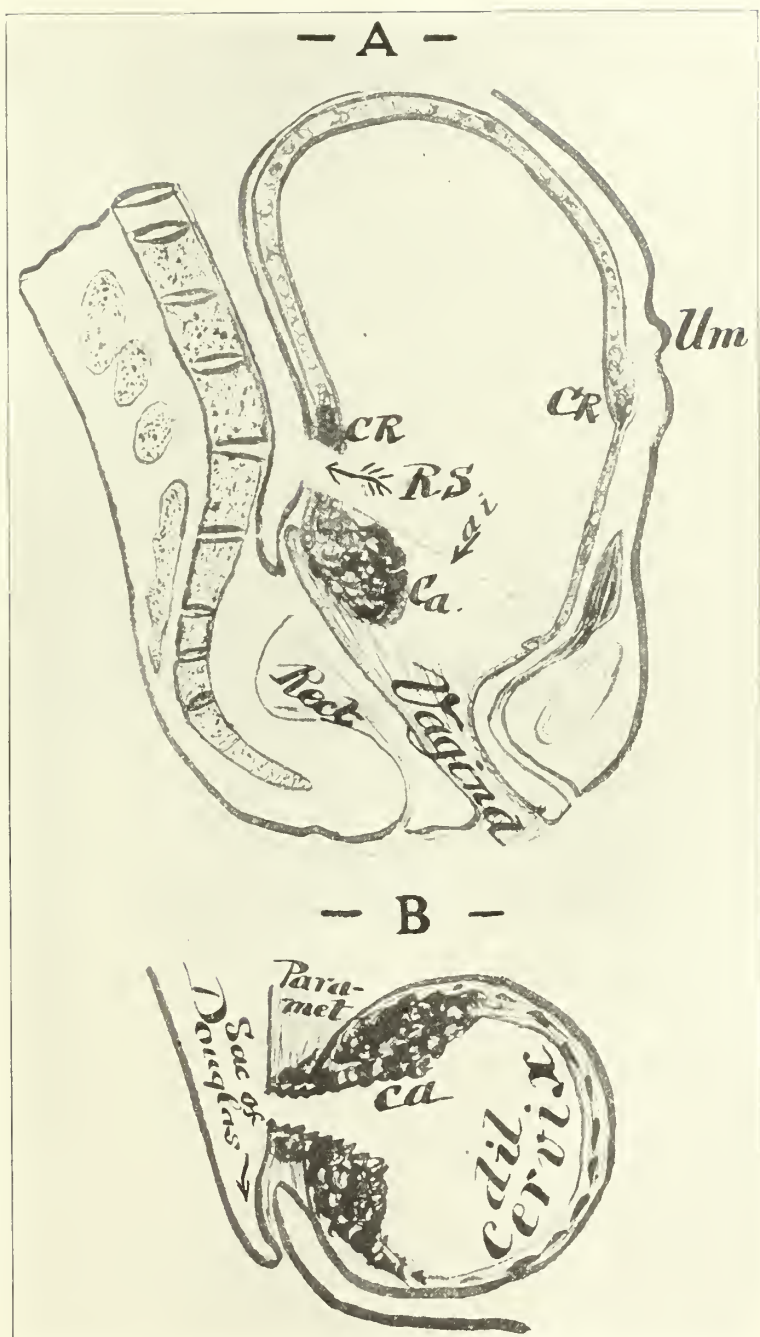


Fig. 4.—Carcinomatous cervix in labor. (A) Uterus with "C R" contraction ring warning danger of rupture just above internal os, as shown by elevation "EL" just below umbilicus "Um." Rupture site of uterus posteriorly "R. S." shown by long arrow pointing to opening in the uterine wall and parametrium and peritoneum into the peritoneal cavity. "A-I" with the small arrow pointing in the axis of pressure at the inlet with carcinoma "Ca" in posterior lip obstructing labor. (B) Rupture through undilatable portion of carcinomatous "Ca" cervix into parametrium and peritoneal cavity. Dilatable portion of cervix "dil cervix" distended to utmost.

frequency of carcinoma in pregnancy and the frequency of pregnancy in carcinoma cases. Orthmann places the frequency at one case of carcinoma in 670 pregnancies; Glockner, one in 1,500; the Tuebingen Clinic, one in 2,000. Wertheim found six women pregnant in 600 carcinoma cases, or 1 per cent., and Glockner 1.7 per cent.

The endocervical and portio carcinomata probably both hinder the ascent of spermatozoa by the carcinomatous secretion, and the endocervical carcinoma also by the destruction of the arbor vitæ, but neither hinder conception within the corpus uteri if impregnation of the ovum occur.

The four points to consider are the influence of pregnancy on the cervical carcinoma, the influence of the carcinoma on the pregnancy, the influence of the carcinoma on labor and the influence of labor on the carcinoma.

The prognosis of carcinoma uteri, whether of the corpus, or of the cervix, is rendered much worse by the pregnancy. It spreads much more rapidly in depth and width of infiltration than in the non-pregnant uterus, because of the hyperplasiæ of pregnancy, the consequently greater blood-supply, the increased development of the lymph-vessels and the increased looseness of the intermuscular and parametric spaces by which the carcinoma cells metastase. Carcinomatous metastases of the iliac, retroperitoneal glands that drain the cervix and upper third of the vagina, as well as infiltration of the paracervix-metric cellular tissue is liable to be very early in these cases.

The influence of the cervical carcinoma on the course of pregnancy is usually such that 30 to 40 per cent. terminate fortunately by abortion or premature labor (Cohnstein), due perhaps to an early invasion of the corpus endometrium or of the intermuscular spaces, interfering with either the formation of the decidua, muscular hypertrophy, and hyperplasia and dilatability of the uterus, or both. Beckmann, however, places the abortions only at 8 per cent., while Theilhaber and some others contend that abortion is not more frequent than usual, and Pinard even states that it is less so.

Winckel advises in early pregnancy if the case is still operable: only think of the woman, remove both the uterus and fetus at once; this has been done up to the fifth month. After the *fifth month*, empty the uterus first and later, if operable, do hysterectomy. If near viability (twenty-eighth week), and the cervix carcinoma be very slight in extent, induce immature labor, or mother may elect to wait till the child is viable. The nearer to term the more is the dystocia increased, even the healthy corpus musculature may be taxed to the limit, or may be too crippled from apparently slight carcinomatous infiltration to overcome the rigidity of the carcinomatous cervix.

Uteri apparently with but slight local carcinomatous infiltration of the cervix, may be extremely slow in dilating (seven to nineteen days) and tear deeply into the parametrium with profuse hemorrhage or sepsis or even into the peritoneal cavity itself with resultant fatal peritonitis. The child is frequently born dead from the prolonged labor.

The uterine contractions under normal conditions would favor the dissemination of the carcinoma cells, while the prolonged labor of the slow dilating carcinomatous cervix makes this doubly liable. The extensively carcinoma infiltrated cervix renders immature, much more premature, or term labor impossible.

Women have continued in labor a whole month and then died undelivered in the cases collected by Beckmann. Nineteen died undelivered out of 126 cases, from exhaustion, hemorrhage, sepsis or rupture of the uterus. Vaginal cesarean section saved all the viable children, and only resulted in 6.2 per cent. of deaths of the mothers in thirty-two cases. Abdominal cesarean section saved all the viable children with 6.97 per cent. of deaths of the mothers in forty-two cases; the uterus being removed at the same time. The expectant treatment resulted in the loss of 50 per cent. of the mothers, and 70 per cent. of the babies.

Gas Building, Chicago.

THE TREATMENT OF HEMORRHOIDS

WELLER VAN HOOK, A.B., M.D.

CHICAGO, ILL.

Hemorrhoids and their treatment so frequently have engaged professional attention that it would be unjustifiable to broach the subject now if the writer had not for many years practiced methods that may properly be described because they are distinctive, well-tried and simple.

The indications for operating must be rigidly drawn, since the non-operative treatment suggested is so frequently satisfactory.

Hemorrhoids should not be operated upon except: 1. When their removal is incidental to surgical intervention for some other purpose. 2. When non-operative treatment is (a) impracticable or (b) unsuccessful.

The positive indications, in patients in suitable general and local condition, are:

Bleeding, inflamed, irritable or painful tumefactions of intractable character. Patients should, as a rule, be urged to try the hygienic method. If not successful the operation may then be done.

Hygienic, non-operative treatment. It must be recognized that hemorrhoids should be treated when irritation causes them to bleed or gives rise to strangulation, spasm, neuralgic pain, pruritus, inflammation or other symptoms. Looked upon as mechanically obstructive bodies which interfere with normal function, hemorrhoids may be so managed that, in many cases they may be endured as an unpleasant or uncomfortable disability and not as a painful or progressive disease. Furthermore, it may well be imagined that the danger of cancer, which is a prominent feature in the grim vista of rectal disease, will be diminished by the management recommended.

Two factors are to be considered; the one the vulnerability of the rectum, the other the physically and chemically irritating feces.

If the management of hemorrhoids is primarily based on these principles the patient need have but little discomfort or suffering.

A. The promontories of the tumefactions are often the seat of dilated and congested veins and of poorly protected capillaries that bleed furiously in proportion to their size when the tumefactions are subjected to the constricting action of the sphincter or to abrasion by the passing feces. Then between the tumefactions are always folds and pockets in which can accumulate putrefying material which gives rise to acrid products that cause ulceration and fissuring or lead to inflammation and hypertrophy of the mucous and cutaneous structures.

The vulnerability of these tissues may be lessened by the use of a stiff ointment or paste, such as:

R	
Lanolin	3 i
Ung. Zinci Oxidi	3 vi
M. sig.: Apply locally.	

This may be softened by adding vaselin or more lanolin, but it is desirable to have it stiff so that it will stick to the parts and act as a sort of protecting paint.

Medicaments may be added, such as opium, cocain, tannin, extract of belladonna, hyocyamus, etc. But it is usually much more satisfactory to use the simple ointment and to administer indicated remedies separately.

The application of a protecting ointment has the great advantage of filling interstices and preventing or diminishing the direct action of irritating material upon the delicate tissues.

B. The great importance of the inter-relations of fecal discharge and the anatomy and function of the bowel cannot be over-estimated when hemorrhoids are present. The tendency of downward-bearing, inspissated fecal masses is to roll outward the sliding mucous membrane and to evert it through the sphincter's grasp ready for strangulation, and the consequent injury of the vascular structures, together with incitement to inflammation. This injury may be prevented by: 1, The maintenance of a soluble state of the feces by the aid of a suitable diet and laxatives and 2, by the use of enemas when the bowels are about to move.

The diet should include but a moderate proportion of meat and should be rich in pultaceous vegetables and fruits. The very juicy fruits and vegetables are of small use. A most useful practice for many people is the eating of apples, bananas, pears or peaches an hour or two before retiring. Laxatives based on cascara sagrada must be used, if necessary, to aid in this important work.

If the sufferer from hemorrhoids will have a good fountain syringe in his bath-room the second great factor in the management will be assured with but little inconvenience. It consists in allowing no solid fecal matter to pass without the use of the enema. This means that the rectum is to be filled with water and the fecal matter surrounded,

softened and broken up before its discharge. Then, when the passage is permitted a column of water opens the bowel and allows the mucous membrane to slide back above the feces instead of pushing it forward and injuring it. After the passage the parts are to be bathed, dried and a dusting powder or a heavy ointment applied.

This management ought to be given a thorough trial by almost all sufferers from hemorrhoidal disease.

The simplest operative procedure consists in excising the masses by oval incisions, the axes of the incisions being parallel with the sphincter muscle. The muscle need not be injured. The incisions are carefully closed by many interrupted catgut sutures. A dressing of heavy zinc oxid ointment is applied.

DUODENAL ULCER *

E. B. COOLEY, M.D.

DANVILLE, ILL.

Two decades ago we were taught that in point of frequency the relation of duodenal ulcer to gastric ulcer was as 1 to 40.

As recently as 1910 Ewald gave it as his opinion that 1 to 40 was yet too high in favor of duodenal ulcer. This, however, is not his present belief. Mayo's last word, so far as I am informed, places the ratio at 3 to 2 and Mayo Robson at 2 to 3, Moynihan, 2 to 5, and Murphy, 1 to 3.

Godman states in the *Boston Medical and Surgical Journal* that duodenal perforation occurs 1/40 to 1/20 as often as acute appendicitis. Further, that of three cases of so-called stomach perforation, in reality two affect the duodenum.

By the predication of these clinical findings we were forced to the conclusion that 80 per cent. of duodenal ulcers were being overlooked, and were possibly masquerading as gastric ulcer, one of the diseases of the gall-bladder or pancreas, chronic typhlitis, perityphlitis, appendicitis or more probably a gastric neurosis. If it be true, then, that duodenal ulcer is relatively more frequent than has been supposed, remembering its greater tendency to bleed, and to perforate, than gastric ulcer, how desirable it is that all become acquainted with the fact. But is the reasoning correct? These facts were obtained clinically. The correctness of these statistics I do not presume to assail, but they apply to none but the cases operated on, taking no account of those cases which heal, as is attested by the scars so frequently found in section material.

The statistics of the Hamburg Eppendorf Institute covering the past four years, and published in *Münchener Medizinische Wochenschrift* for March 19, 1912, follow. There were made in that institution in the years 1908, 1909, 1910 and 1911, 8,534 sections as follows:

* Read at the Sixty-Second Annual Meeting of the Illinois Medical Society, at Springfield, May 22-23, 1912.

	Sections.	Stomach Ulcers and Scars.	Duodenal Ulcers and Scars.
1908.....	2,016	16	2
1909.....	2,185	27	7
1910.....	2,239	20	11
1911.....	2,094	36	15
Total.....	8,534	99 1.1%	35.4%

To these add the statistics of the Pathological Institute at Kiel by Krug.¹ Among 12,020 sections, duodenal ulcers or scars occurred fifty-three times. Perry and Shaw found in 17,652 sections, seventy ulcers and scars, and you are able to total 38,212 sections, done upon persons of all ages, with a total of 158 duodenal ulcers or scars, or a percentage reduced to 0.41 per cent.

Etiology. Of the pathogenesis we know little; of the etiology, less. But it is not too much to suppose that through the medium of physiologic chemistry much assistance may be expected along these lines in the near future.

Among the predisposing causes have been enumerated diet, trauma, thermic influence, syphilis—10 per cent. of duodenal ulcers are said to be of syphilitic origin—infection, embolism, tuberculosis, vascular changes, as arteriosclerosis universalis, age, struma, puberty, burns and what not. Cramer quoting Brenton on round ulcers of the stomach, credits him with considering puberty, as well as old age, a potent factor.

In Nothnagle's "Diseases of the Intestine," I find from an etiologic standpoint ulcers of the intestines can easily be divided into a number of groups, as follows:

First Group: Ulceration as a result of necrotic processes: simple duodenal ulcer (including peptic ulcer of the jejunum); ulcers following cutaneous burns; embolic and thrombotic ulcers. (The peculiar ulcer of the intestine seen in patients with multiple neuritis belong to this class.) Amyloid ulcers.

Second Group: Ulceration as the result of inflammatory processes: catarrhal ulcers, follicular ulcer, simple ulcerative colitis, stercoral or decubital ulcer.

Third Group: Ulceration as a result of acute infectious diseases: typhoid dysentery, diphtheria, anthrax, sepsis, erysipelas, varioloid.

Fourth Group: Ulceration as the result of chronic infectious disease tuberculosis, syphilis, lepra, pellagra.

Fifth Group: Ulceration as the result of constitutional disease: gout, scurvy, leukemia.

Sixth Group: Toxic forms of ulceration: uremic ulcer, mercurial ulcer.

Six groups comprising twenty-four distinct classifications from an etiologic standpoint. Why not proceed indefinitely in the enumeration of imaginary causes for that unknown condition in the human body which induces the stomach to digest a circumscribed area of its own mucous lining? Page 256, same author, same volume, "Ulcer of the Intestines in Cutaneous Burns":

In most exceptional cases the ulcers appear in the stomach (in addition to other ulcerations in the intestines). In the majority of cases the duodenum is affected. My reason for not discussing this form with simple duodenal ulcer, like other authors, is that it is distinguished from the latter lesion both by its specific etiologic factor and by its course. I hardly believe any treatment will ever be successful in these cases.

1. After Safforth, D. M. W.: No. 15, 1911.

As a matter of fact, patients mortally sick from any cause have developed duodenal ulcer. Why not in the case of burns? Again patients apparently not otherwise sick succumb to duodenal ulcer. Other patients develop duodenal ulcer with few symptoms, or none, which heal, leaving only a scar to tell the story. When we know more of the pathogenesis of duodenal ulcer the etiology will be more clear.

The arteriosclerosis, old age, puberty and external burn theories are apparently refuted by Professor Frankel by the Hamburg statistics just quoted. Incidentally, the theory that gastric ulcer is more prevalent in women, is not upheld. Of the ninety-nine gastric ulcers, fifty-two were found in the male and forty-seven in the female.

There were among these sections, twenty burns of the third degree and there was found a single ulcer of the duodenum in a 1½-year-old boy. On closer examination this seemed to have appeared before the burning took place.

It is interesting to note that in the second ten years of life—obviously covering the age of puberty—there were among these 8,534 sections, one gastric and one duodenal ulcer.

It is generally accepted that through circulatory disturbances as embolism, thrombosis, hemorrhages, etc., a circumscribed part of the mucous membrane is separated from its circulation, becomes necrotic, and is finally digested by the acid gastric juices. The first segment of the duodenum extending to the papilla, since it is subject to the acid chyme, presents a like possibility as the stomach itself for the formation of peptic ulcer.

Eiselburg pointed out that after operation, especially of the abdomen, stomach and duodenal ulcers were liable to form, and sometimes with fatal bleeding.

Page has made the observation that these ulcers occur in inflammatory conditions of the appendix. As an explanation it is declared that because of ligation during the operation, especially of the omentum or mesentery, inflammation of the appendix, thrombus formation, secondary to infection, with retrograde extension, results in the shutting off of the circulation to a localized area in the stomach or duodenum. Page states that eight cases of twenty-six, operated on by him, showed such a condition. In the *Lancet*, London, No. 7, 1911, Herbert J. Patterson states that on looking over his histories for the past three years he finds that 66 per cent. of the duodenal ulcers operated upon by him showed changes in the appendix which were without clinical symptoms of appendicitis. This would suggest that possibly appendicitis could cause duodenal ulcer.

Differential Diagnosis: The differentiation of duodenal ulcer presupposes the consideration of many lesions, as well as functional disorders, in and about the pylorus. Carcinoma of the stomach and pancreas, carcinomatous degeneration of an ulcer, gastralgia, gall-bladder disturbances, chlorosis, and angina; diseases of the pancreas, gastric crisis, hernia in the linea alba, congested liver, toxic hepatitis, intestinal parasites, enteralgia, kidney disturbances, appendicitis, gas-

tritis exfoliativa, ulcerosa, incipient tuberculosis, luetic and tuberculous stomach ulcer.

Of special interest is the differentiation of those processes in this neighborhood which cause pain. Pyloric ulcer, gall-stones and chronic inflammation in and about the gall-bladder; pancreatitis and new growths in the head of the pancreas; occasionally an inflamed appendix located high up. Less frequently are kidney stones or diseases of the pelvis of the kidney and ureters to be differentiated.

With the exception of stomach ulcers—malignant or benign—all the above mentioned diseases can be differentiated by the repeated demonstration of blood in the stools. Certainly bleeding may occur in cases of cholelithiasis or hepatic cirrhosis, but this is so seldom in these cases, and when present is associated with such typical symptoms, that it should cause no confusion. While it is also possible to get blood in appendicitis, as a matter of fact, there are only four cases of this kind in literature.

In the case of carcinoma the abdomen is less tender, and the vomiting is of the stagnation type. Carcinoma is more frequently palpable. Melena occurs in both, but after rest with a liquid diet with rectal feeding for a few days, the occult blood usually disappears in the case of ulcer peptic in character. This frequently marks the beginning of convalescence. In the case of carcinoma, the bleeding usually continues during treatment, or disappearing, begins upon the administration of food by mouth. This is given considerable importance by Hans Elsner in the differentiation of the two conditions.

Having narrowed the diagnosis to peptic ulcer, there yet remains the very important question of its location with relation to the pylorus. Boas states that "the differential diagnosis between gastric and duodenal ulcer is of more scientific than practical value." Nevertheless it is desirable, and of sufficient importance to occupy the remaining moments of this paper.

The typical duodenal ulcer pain comes on regularly, a long time after eating—three or four hours—also at night, with the presence of tar-colored stools without the accompanying vomiting of blood, and a constant pain to the right of the median line, which radiates to the sternum or the right flank. If the ulcer is located in the stomach, dyspeptic disturbances predominate, especially vomiting. In ulcer of the duodenum these disturbances and vomiting are rare. In ulcer of the stomach occult blood is found in the stomach contents and also in the stool. In ulcer of the duodenum, as Ewald has lately shown, one finds occult blood only in the stool in most cases, but unfortunately these apparently sharply drawn differential findings are not absolutely reliable, since in cases of known gastric origin, blood has been found in the stools and was not observed in the stomach contents. (Reported by Boas, Strauss, Kuttner.) Also in ulcer of the duodenum traces of blood sometimes occur in the stomach contents. Only where these symptoms agree can we diagnose duodenal ulcer positively.

Finally the relation of the pain to the taking of food plays a most important rôle in the differential diagnosis. The increase or decrease of the stomach secretions are not significant here, as hyperchlorhydria occurs not only in ulcer of the stomach, but in ulcer of the duodenum, and the alleged statement of Moynihan that recurring hyperchlorhydria is a medical term for a surgical condition, is without foundation.

The valid reasons for operation, I believe, are recognized to be: first, perforation; second, repeated intestinal hemorrhage; third, cicatricial stenosis of the duodenum, with or without gastric dilatation; fourth, a case that will not yield to treatment; fifth, recurring cholecystitis.

Macroscopic melena occurs, but much less frequently than occult blood. A mystifying situation may be cleared by the demonstration of occult blood in the stool. Earlier writers as Strauss and Oppenheimer observed bleeding only in one-third of their cases, but overlooked examination for occult blood. Ewald states that he has found occult blood present almost without exception. Melena, together with other signs pointing to duodenal ulcer, are pathognomonic only when there is no blood in the stomach contents. The passage of blood from the duodenal ulcer into the stomach with the absence of intestinal bleeding is certainly rare. Ewald has seen no such case. In some cases, first blood is vomited, then bile and blood. Of course one must eliminate disturbances of the lower bowel, especially hemorrhoids, which may produce bleeding.

It is estimated that vomiting occurs in duodenal ulcer only where cicatricial stricture or mechanical stenosis of the intestine exists, possibly 17 per cent. of cases. One of the characteristics of duodenal ulcer is that the pain is not relieved by vomiting. In gastric ulcer relief is immediate. If vomiting occurs in gastric ulcer, it is at the height of the pain.

The administration of artificial acids produces pain immediately in the case of gastric ulcer and in about three hours in duodenal ulcer. If the administration of food or alkalis gives relief, it is prompt in the case of gastric ulcer and in about two hours in the case of duodenal ulcer, in which case it acts reflexly, stimulating the bile and pancreatic juices.

Ewald states that dorsal points of tenderness occur, but irregularly. Boas, however, places some stress on this differentiation. The development of icterus, which cannot be otherwise explained, should suggest duodenal ulcer.

As support for doubtful cases duodenal ulcer occurs more often in men. Boas has attributed this to the use of alcohol.

The typical Roentgen findings in ulcer of the duodenum are hyper-tonia and rapid emptying of the stomach. The increased motility of the stomach depends on the reduction of the duodenal reflex. Through the accumulation of irritants there may be produced duodenal spasm with attending gastric stagnation.

By the use of lead markers on the abdomen over the seat of the pain and the localization of the underlying points with relation to the stomach as observed by means of Roentgenoscopy, the diagnosis may be made.

The Einhorn bucket, apparently useless as such, does act as a sinker for the thread, the employment of which is upheld by some of the most careful observers. The last modification, the split shot, seems to conform to the anatomical discrepancies and personal peculiarities of the usual stomach better than the bucket. While deserving of further trial, its utility is doubtful. (I would suggest that by the use of the *x*-ray it is difficult to demonstrate that the lead has passed out through the pylorus.)

With these practical points firmly fixed in his mind, the painstaking clinician will sometimes be able to rescue a patient from impending danger.

DISCUSSION

Dr. Robert S. McCaughey, Hoopston: Before considering the pathogenesis of peptic ulcer which I have been asked to discuss, I wish to emphasize the necessity of repeated examinations of the feces for occult bleeding in all cases of digestive disturbances. It happens frequently enough that duodenal ulcer causes only a slight amount of belching or maybe a slight discomfort after eating.

As to duodenal ulcer following burns, Power considers that it occurs only in those cases which suppurate. What are the pathogenic factors concerned in bringing about this localized area of necrosis known as peptic ulcer? A number of theories have been proposed of which several have been demonstrated by animal experiments which show that we are not dealing with a uniform process. Changes in the vessel walls, lessening the supply of blood to the parts have been demonstrated repeatedly as one factor. These artificial ulcers, however, heal more rapidly than the clinical variety.

Chronicity was produced experimentally when digestive activity was increased. Clinical observations speak for increased digestive action as a pathogenic factor, as ulceration of the jejunum after gastrojejunostomy. Peptic ulcer of the duodenum occurs most frequently where the acid stomach contents spurt against its walls. The normal gastric mucosa is resistant to hyperacidity. The Hunterian conception was that resistance to digestion lay in the "vital activity of the tissues." Today we say resistance depends upon a normal state of nutrition for which a normal quantity and quality of blood is necessary. Neumann said that gastric juice attacks only necrotic tissue. He went to the extreme. He did not recognize different degrees of nutrition. These two factors, disturbance of cell nutrition and increased digestive activity, are the most important. If the blood-supply to an area is absolutely cut off, necrosis follows through autolysis. No action of gastric juice is necessary. This is clinically illustrated by ulcer with achlorhydria. Hyperacidity becomes a pathogenic factor when the disturbance of local nutrition is relative. If hyperacidity is present, an ulcer will be formed if there is an area of disturbed nutrition, or we may say weakened resistance. Doubtless there are people who have areas of lessened nutrition in the stomach or bowel wall due to blood-vessel changes who do not have ulcer because they have never had an attack of hyperchlorhydria. They have a low acidity which compensates for the tissue disturbance. This is illustrated clinically frequently in patients after fifty; an age characterized, we may say, by blood-vessel changes, but because low acidity is the rule at this time of life, ulceration is not more frequent.

Changes in the quality of the blood may also disturb cell nutrition. This is experimentally demonstrated by injecting pyrogallol, pyridin, lead, arsenic, etc. In chlorosis, constriction of the vessel and intima changes are described. To this quantitative factor there is added a second factor, qualitative changes of the nourishment. We would expect ulcer as a frequent occurrence, especially so if a third factor is added, hyperacidity of the gastric juice present in 73 per cent. of all cases of chlorosis in Leube's clinic, and in 95 per cent. in Riegel's clinic. Therefore, besides the local disturbance of nutrition we may have a general source of nutritional disturbance as a pathogenic factor.

Innervation disturbances produce ulcer. Through resulting spasmodic or hypertonic contractures of the muscularis mucosæ, a local ischemia brings about a quantitative nutritional disturbance.

The mycotic origin of some ulcers is established by clinical observation and animal experiment. It is considered a relatively infrequent factor.

Katzenstein's results could not be obtained by Viola and Gaspardi. Quantitative determinations of antipepsin in Ortner's clinic in Innsbruck recently showed no reduction, and in a number of cases even an increase of antipepsin.

In all of these disease processes brought about by many etiologic factors there is one condition fulfilled, a disturbance of nutrition.

The question now arises, have we evidence that toxic substances are elaborated in the body which act directly on the epithelial cells without producing changes in the vessel walls? Payr produced typical ulcer of the stomach through intravascular injection of hot physiologic salt solution, dilute formalin and dilute alcohol without injury, according to Boas, of the circulation. With the hot salt solution there was certainly no disturbance of isotonia, certainly no toxic action, but a disturbance of nutrition by exclusion or great dilution of the blood to the parts. By the use of dilute formalin solution and dilute alcohol the same disturbance of concentration may have obtained or a direct toxic action upon the epithelial cells may have played a part.

Devie and Chavet, Perry and Shaw, together report 140 cases of ulcer of the duodenum in which twenty-four cases of Bright's disease occurred. Whether in these cases and in ulceration occurring in uremia, there are changes in vessel walls, we do not know. Too little attention has been given to the condition of the vessels of the stomach and bowel.

A bacterial toxin necrosis is admitted. As to intestinal and metabolic sources, there is no proof. Until we know something more definite in regard to these toxins, and those causing changes in the vessel walls, we will not know whether one or a class or many bodies are concerned.

EPILEPSY AND CRIME; THE COST

A REPORT FROM THE JUVENILE PSYCHOPATHIC INSTITUTE, CHICAGO

WILLIAM HEALY, M.D., DIRECTOR

The price which society pays for neglecting its epileptics has never half been told. The sorrow and cost of wasted and frequently vicious lives occurring as the result of this at present incurable disease has never been estimated. One most important part of the price paid can be learned through gaining knowledge of the connection between epilepsy and crime. To this end some of the hard facts of our own experience are worth reporting at this time.

To-day a fine type of immigrant mother brought her boy, and he will serve by way of illustration of the general problem. "It is not so much what he has done as what I am afraid he will do," she explained. Although guilty of a number of misdemeanors, there had never been police complaint against him until now, but steadily his tendency has been towards moral unreliability in spite of his mother's good efforts, and in spite of his affection for her. She never knows what this nice-looking, well-developed lad is going to do next. At times he seems absolutely uncontrolled, a creature of vicious impulses. His violence leads her sometimes to fear a tragedy in her home circle. At other times

he is kind and quiet and well-meaning. His variations from day to day are excessive, both mental and moral. All this, readily gathered from the boy and his mother, formed the typical history of a lad who for years had frequent convulsions, but who recently has had only momentary flittings of unconsciousness. As she foresaw, here was the making of a candidate for the criminal courts.

In the work of our Institute, which represents the most thoroughgoing research into the genetics of criminalism ever undertaken in this country, we have with the help of parents and others carefully studied nearly 1,000 young repeated offenders. We have found that no less than $71\frac{1}{2}$ per cent. of these are certainly epileptics, and we have reason to suspect others.¹ If one remembers that it is ordinarily calculated that one person in every 500 is epileptic, the significance of this high criminal percentage is clear, and the practical bearing of it is still further accentuated by the fact that some of the worst repeaters are epileptics, and that many of the gravest crimes are committed by those unfortunates. The connection between epilepsy and crime has everywhere been recognized by students of the subject, but it apparently needs constant emphasis in order that common sense steps may be taken toward guardianship of these who suffer from a disease which wreaks such extravagant vengeance on society.

The progress of so many epileptics downward from dispensary clinic to prison has not been made a matter of general knowledge for the same reason that many of the main factors lying back of criminalism have not been brought to light. Continuation studies of special human types and of the results of special experiences have hardly begun. The fact is that if many clinicians could have the opportunity of knowing the moral end-results in the epileptic cases they have seen, they would find a considerable number of them in penal and reformatory institutions, or members of the vast crowd of tramps and city lodging-house bums.

Recently, in connection with court work, I saw a young man whom I had treated at the clinic ten years before. He comes from a very decent family, and had early in life very decent impulses, but with the progress of his disease he developed a typical mania for wandering, was willing to sleep on the roadside, stole mildly and took his pleasures as he found them — a big, hulking, soft-voiced fellow, quite rudderless in a world which offered no chances for him. During the interim he has served through one long reformatory term and several correctional sentences. In one city his mother found, while tracing his wanderings, that he had been picked up intoxicated, and on the supervision of a mentally clouded condition he had been sent temporarily to an institution for defectives. We found a farm home for him, but after a day's work he was off again. The possibility of this wanderer's further crimes and criminal trials and punishments then began burning themselves again in his mother's mind, and the outrageously weak part of the situation is

1. This by no means represents the total number of epileptics seen in connection with juvenile court work, where, of course, first offenders as well as large numbers of dependents are seen. In addition to my above enumeration, other cases seen by the Detention Home physicians and by myself amount up to many scores of cases.

that they should not be just as vividly foreseen by society, which has neither offered him a home nor protected itself against him.

This almost inevitable downward progress, which could be vividly depicted by a Hogarth, was fully appreciated by a young fellow who came into the Juvenile Court last year and boldly asked to be sent away for a long time to a reformatory or, if that was not possible, to the House of Correction. "I just see what's coming to me," said he, "I'm getting in wrong. They wouldn't have me in school and I hung around on the streets. And now they fire me at any job I get as soon as I have a fit. I'm bumming on the streets all the time, and you know who the fellows are there are to bum with. I see where I land all right, and I want to go there now before I get into trouble."

There are two main causes, easily perceived, which lead directly to the remarkable correlation between epilepsy and crime. One of them has been emphasized considerably by psychiatrists. It is the fact that the disease itself produces very frequently a characteristic, definite mental and moral deterioration shown most markedly in the field of social inhibitory powers. The social considerations which are paramount with most of us, and form the basis of most of our actions, are with them more or less dissolved or absent. Hence, the gross appetites, the cruel behavior and the vicious crimes.

The other cause is inherent in environmental conditions. The epileptic's very social inadequacies lead, as our boy said, to bad associations. Add this to his lessened powers of social resistance, and in many cases there is brought about a most deplorable result. The learning power for evil things possessed by a deteriorating epileptic is, I believe, almost unequalled. Some poor victims of this disease that one has come to know have been veritable sinks of iniquity. But after all, one may ask, why not? Their limited social opportunities offer little satisfaction under normal moral restraint, and they naturally follow a path of little resistance.

Instability in the moral sphere is readily found to be a prominent feature of epileptic offenders. They show great variations from day to day. They may commit the most surprising and unexpected crimes. To know the moral caliber of an epileptic to-day does not mean knowing it to-morrow. This, of course, is the result of variation in phases of the disease. Here is not the place to go into technical discussion of the automatic or twilight condition observable after convulsive attacks or taking their place—it is sufficient to say that these differ greatly in nature and incidence, but play only a minor part in the production of criminal behavior.

For the understanding of the whole subject by non-professional readers it should be emphasized that the types of epilepsy in which actual convulsions do not occur—the so-called minor epilepsies, where there are mere momentary losses of consciousness—are often accompanied by a greater amount of moral and mental deterioration and variation than are the cases of the major or convulsive type.

This variability is well shown in the instance of a boy whom we have often seen; a strapping lad who is a terrific problem on account of his frequent commission of offenses. At times the poor fellow is full of ambition and shows, indeed, normal ability. He particularly desires to be a professional man, a lawyer. In addition to his school work he has started law studies. And yet the first time I saw him he was in such a dazed condition for hours that he hardly knew his own name. He had been involved in a miserable affair which sent a degenerate man to prison for a long sentence. Sometimes he has been found full of vindictive spirit toward even his own relatives. At other times he has displayed much contrition at the offenses he has in his uncontrolled moments committed.

A terrible train wreck of a west-bound flyer was almost perpetrated, being narrowly averted through the discovery of the obstruction five minutes before the train was due at that point. The wreck was deliberately planned by our would-be lawyer under the spell of one of his whim-controlled states. He knowingly placed some angle irons in the best way to do the work, and then went about in the unfamiliar neighborhood, met some boys and invited them to come down soon and see a train tumble over. I repeatedly asked him why he did it, and all he could answer, while expressing deep regret, was that somehow he remembered he had just wanted to see what a wreck would look like. A few of his deeds have aged his mother a score of years, and have kept not a few policemen busy. But if met only in his better moments one would scout the possibility of his being the source of so much trouble.

The changeableness of the epileptic character leads not only to criminal incalculability, but also to the despair of those who would administer the law according to the canons of criminal responsibility. Clouston says, "Murder by an epileptic should be looked on as being as much a symptom of his disease as larceny by a parietic," but courts of appeal have decided that epilepsy is no excuse for misbehavior unless the given deed is done under the influence of an immediate seizure. I am inclined to think that, after all, unless we select the more humanitarian method and take care of our epileptic offenders permanently, the court's decision, psychologically so palpably absurd, offers in its scheme of retribution the wisest solution for the protection of the social well-being.

The range of offenses perpetrated by epileptics is extensive. The four-foot specimen of humanity, who was celebrated in the newspapers as the Champion Lost Boy of Chicago, formed an amusing but fairly costly spectacle at one end of the gamut. A hundred times, his people say, he has been away from home, and of course the police, by night or day, have had to struggle with the question of who he is and where he lives. More than once his playmates have wandered with him and parents have searched in vain. Such wandering speedily leads to worse things. One family loses its son and brother for weeks at a time, and perhaps he is found drunk in a barn, or perhaps he is discovered in the Bridewell.

At the other end of the range are those who commit desperate crimes, often of a cruel and degenerate type, showing insane impulsions. One of the worst murderers of recent years in Illinois, a killer of women, was an old epileptic. His trial and hanging cost thousands, and he was guilty of much more than he was tried for. The lurid annals of criminology are full of the dastardly deeds of epileptics.

The gravest sex offenders are often epileptic. The disease is compatible with a vigorous general physique, and not infrequently Nature has also thrown on these unfortunates the burden of a premature and excessive sex development. This, taken with their lack of power to control their natural appetites, makes them doubly a menace. We could give many instances of this and recount its results for society. I well remember one mother who came in highly indignant at the laxity of society in not taking care for its own sake of her 14-year-old boy. "What can be done for him under the law," she exclaimed. "I fear for my own sex."

And epileptic girls, showing mental deterioration, are to be regarded as, unless under the strictest safeguards, potential sex offenders. Our case histories reek with the failure of the ordinary home to prevent the moral downfall of epileptic daughters. Nothing is more shameless than the offering by these girls of their own persons. They, as well as the boys, sometimes develop early from the physical side and have an excess of sex instinct. The distribution of venereal disease from such neighborhood source can better be hinted at than here detailed.

One very great general cause of crime, not at all appreciated, is implicated in this situation of non-segregation of the epileptics. I refer to the fact that from an epileptic with vicious tendencies there is frequently an immense amount of social contagion. Not only are the epileptic easy learners of vice, but they are great spreaders of it. The very fact of their deterioration in the sphere of social and moral inhibitions causes them to be willing spreaders of evil knowledge, and, indeed, causes them to seek an outlet for their tendencies in evil teachings. These possibilities can well be imagined. We have seen many illustrations of the fact, running all the way from the instruction in miserable pervert sex practices to the teaching of skilful methods of thieving.

Another point not generally appreciated is that epileptics, as well as high grade feeble-minded individuals, and some of the insane, exhibit a great deal of low cunning and skill. Why not; if the more healthy and normal avenues of gratification of self-expression are barred to them, why should they not seek the types of gratification at which they discover themselves most successful?

An eleven-year-old epileptic boy, weight 70 pounds, we first saw a couple of years ago when he was brought into court. The complaint was attacking little girls and injuring a boy. As is usual in the Juvenile Court there was good apprehension of the needs of the case, but there was not the slightest public facility for the care of him. He was tried in one public educational institution, but on the first appearance of his epileptic

tendencies, which were quite infrequent in the daytime, he was rejected. It was rightfully considered dangerous to keep him there. Both before then and since, for the same reason, he has been rejected from schools. A week ago this lad was once more presented in court, and with him were implicated four other little chaps, his disciples. The principal of the school in whose district this boy lives recounted this last time something of what he knows of the case. He stated that he could well calculate that this boy had already cost society \$5,000, mainly through his teaching of others the fine arts of crime. I went over the case again and am inclined to believe these figures to be well within the truth. Notwithstanding his disease, he is smart in several ways, and particularly in his deftness in abstracting other people's belongings. He enjoys his performances thoroughly, and is a great teacher of others, taking smaller boys from the streets down town with him and showing them the tricks of his trade. Some score of boys are already known to have been involved with him, and enough of them have been sent away to public institutions as the result of his teaching to make the immediate cost of their up-keep for their first prescribed terms, together with many other expenses connected with the boy, a sum so far of at least \$5,000.

Epileptics, of course, are not wanted in the ordinary schoolroom, they can not be tolerated in a business position, they are dangerous to themselves and to others in almost any factory or workshop, and they are not even wanted in reformatories. Perforce of their very disease they are not included among the reformable, and would interfere with the well-being of those who are. But yet if out of mere sympathy for their disease they are pardoned from a penal institution without other care being enforced upon them, a grievous injustice to the welfare of the state may be done. The miserable degenerate murderer above mentioned, the woman killer, had been during his youth pardoned, so his family stated, from a reformatory in a certain Eastern state by the governor because, forsooth, he was an epileptic. Now if there is any type of criminal that we can absolutely predicate to be a menace when pardoned and at large, it is the epileptic criminal.

There is altogether too little understanding of the main factors which lie back of criminal conduct. There are many reasons for this. Information given to the public through the newspapers rarely consists in anything else except the exploitation of the details of the crime and its immediate antecedents. Only occasionally do we ever note an attempt to present an estimate of what the make-up of the individual is who has perpetrated the offense. The newspapers and the reporters are not interested in the ultimate causes, and so the public does not get educated on these points. It is only occasionally, as in the case of a Chicago murder last year, where one may see even an allusion to the fact that the offender, who in this case decapitated a young playmate, was an epileptic. In all the times that our champion lost boy was mentioned in the papers nothing was ever, to my knowledge, said about the disease which was in the background of his delinquency.

Nor has the matter of causation become a part of the understanding of criminalism as reflected in ordinary legal procedure. But as I suggested above, perhaps it is best so unless the attempt is made to stem the tide of criminality somewhere near its sources.

How little can be done about the matter of protecting the public under even the parental provisions of the juvenile law unless there are adequate facilities for the care of epileptics by the state is shown in the experience of our own court. There the impending danger is recognized by a wise and sympathetic judge, but all to little purpose.* Our experience shows that under the jury method in vogue there is little chance of an epileptic being considered insane. Of course, he may show not the slightest signs of insanity at the particular time he is under observation. And then when even going voluntarily into a hospital for the insane there is encountered at once the decision on the part of the superintending physicians that such a hospital is not the proper place for an epileptic who is not considerably demented, and of course they are right. The individual soon comes out into the world again and, as we have only too often seen, recommences his undesirable behavior.

The total cost of even our own group of repeated offenders we should not dare to estimate—calculations of criminal costs are extremely difficult to make with accuracy. The above estimate of a single case indicates something of the size of the problem. The yearly cost to a state like Illinois is immense. So far as numbers are concerned our own data show the development in dozens of cases of young epileptics into the most reckless criminals, hold-up men, "gun toters," and degenerate offenders of all kinds.

The non-segregation of epileptics (in spite, here in Illinois, of many previous professional appeals to legislators) is utterly uneconomical, unsympathetic and in general significant of a partially civilized state of social consciousness. The tears of afflicted mothers, the heart breaking discouragements of the epileptics themselves when they are not too far gone to care, and the vast costs and injuries actually endured by society on account of crimes and vices committed by epileptics, all cry out against such wanton neglect.

* Judge Merritt W. Pinckney has repeatedly in addresses, in communications to the newspapers and in his testimony before the County Civil Service Commission, called attention to the terrific social necessities concerning epileptics encountered in the Juvenile Court. At the latter time, when asked to state the reforms necessary in the Juvenile Court, he said: "First, provision should be made for the care of the epileptics who come into my court, sometimes as many as three or five in a week. . . . These epileptics are turned loose on the street. Epileptic girls, at an age when they become delinquent, are susceptible to influences that other girls with mental capacity and strength of character can resist; but they fall, and you force the court to turn them loose to go back to the red-light district. Epileptic girls who are delinquent are a positive menace to society. . . ."

ILLINOIS MEDICAL JOURNAL

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FEBRUARY, 1913

THE PANAMA EXCURSION

We are pleased to announce that arrangements for the Panama excursion have been perfected in such a way that it will be perfectly satisfactory to every member of the State Society who contemplates the excursion.

Instead of assembling at St. Louis and losing a day's time, arrangements have been made by which those from the northern part of the state can take the Illinois Central Seminole Limited out of Chicago at 8:15 Saturday evening, March 1, and those from the southern part of the state take the same train out of St. Louis at 11:20 P. M. The trains will be consolidated at Vandalia, and run a special from that point directly through to Jacksonville. This train will reach Jacksonville at 7:30, Monday morning. There will be time to look around that city until afternoon, and the remainder of the trip to Key West over the sea-going road will be made in time to reach Key West for the splendid steamer *Evangeline*, which carries no freight, and makes the trip to Panama in three days.

Every obstacle being now removed, we are sure that no less than 200 physicians of the society and their friends will go on this excursion, which certainly will be a delightful one. Rate from Chicago for round-trip, \$244, and from St. Louis, \$239.

DRIVE OUT THE FRAUDS

From Monmouth, Macomb and Carrollton, we learn that a certain imposter calling himself Dr. Schiller, who uses the prayer and laying on of hands game for swindling the people, has visited these towns, and in at least two of them has run afoul of the law for practicing without a license, and obtaining money under false pretenses. His coming should be watched for in every town in the state, and complaint made of his fraudulent practices and disgraceful travesty of religious methods before he gets started to swindling the gullible public.

We learn that at Carrollton a good many patients were treated by him at the Pearson Hotel on January 21, and on the 22d charges were filed against him. The previous week he was in Macomb, and the *Journal* of that city gives the following account of his success and the steps that were taken to make him move:

Mr. Schiller, who claims to heal by the aid of prayer and laying on of hands, was here Friday, and as a result of his advertising methods the Williams House was crowded all day with patients. Some of those who were treated early stated that they had been swindled and went to Chief of Police Pudum and he and the two police went to the hotel. Those treated said he charged from \$1.00 to \$10.00 for a treatment, wherein he had advertised free treatments.

When the police arrived, they found the waiting room full of those who wanted treatment, there being great numbers present from the city and up and down the railroad, attracted by the advertising. The chief called the doctor to one side and told him that some who had been treated had complained to him, claiming they were swindled. He asked the doctor if he was within the law in his practice, and he said that he was. He told him then to go out before those assembled and tell them that some had complained about his treatment, and thus warn them, so if they took the treatment they would have no cause to complain. This he did, and he also told those who were in the room to let the patients from outside the city be treated first, and he could wait on the local patients later. He did a big business, his office being crowded all day.

IRREGULARS IN DIRECTORIES

Irregular practitioners in all parts of the state seem to be constantly endeavoring to crawl under the tent, and take their seats as registered physicians before the public. One favorite method is to be listed among physicians in the city and telephone directories. In the Springfield Directory classified as physicians are osteopaths, cancer specialists, advertising specialists and the Viavi Cure.

In Peoria we understand, in addition to the above, faith healers are listed as well as several persons who have no medical title of any sort. We have no information from other localities, but undoubtedly a similar state of affairs exists in nearly every one of the cities in the state.

The city and county societies in every place should take this up with the directory printer, and insist on placing these practitioners where they belong, and not under the list of physicians. We understand that where this matter has been brought to the attention of the companies, they have been very glad to right the wrong.

QUACK DOCTORS AND THEIR DEPREDACTIONS

One M. J. Kraus, who assumed the name of "phenomenal" during his residence in Peoria, has come to grief in Los Angeles, Cal. During his stay in the Illinois city, Kraus gave a show at the old tabernacle on Globe Street, and while there sold thousands of bottles of his patent medicine. It is said he was known as a degenerate while there, and the account of his escapade in the city of Angels surprised no one. Kraus has operated in a number of eastern cities, including Cincinnati, and notwithstanding his outrageous pretensions and bombastics, it seems, was successful in swindling numerous people. Owing to the belief that he is mentally unbalanced, he was delivered to the custody of his brother, who has promised to care for him.

Another irregular practitioner was recently arrested on statutory charge in Springfield, and will probably be brought to trial in the near future.

THE SMALL-POX SITUATION

As has long been expected, the time has arrived when an epidemic of small-pox is due in Illinois. The present generation has not remembered the lessons of former disastrous epidemics, and the use of vaccine virus has for many years been neglected by the profession. Christian Science and New Thought devotees have worked up a sentiment against the compulsory vaccination of school children, and all things taken together have conspired to give full sweep to the invasion of the dreaded scourge.

It is not necessary, of course, for us to point out the disastrous effects which are likely to result from present conditions. We sincerely believe that this prejudice against vaccination would not prevail if there existed in Illinois a State Board of Health worthy of the name and having the confidence and support of the medical profession and the lay press.

HOW HE SELECTED A DOCTOR

A woman living in a down-town street was ill with sore throat. She had not been ill for years and had no regular physician, so her husband set out to look for one. Their son, a lad about 10 years old, went along as guide. Half way down the block they came to a house whose front door was decorated with a doctor's sign.

"Here is one," said the boy, and started up the steps. But the man stopped him. "Wait a minute," he said. Then he leaned against the railing and stared up at the windows of the doctor's office. "I don't want him," he said presently. They went on. Soon they came to another sign. "Here is another," said the boy. Again the man looked intently at the front windows. "No," said he, "he won't do, either." They went to two more places in that street, and to one in the next street before finding a house where the man would consent to apply for medical aid. Naturally, the boy wondered, and finally he asked his father why he left the other houses without going in.

"I wouldn't go into those places," said the man, "because the windows were dirty, and I never saw a doctor who lived in a house whose windows were dirty that was worth his salt."

THE APPLE

How dear to my heart are the scenes of my childhood,
When fond recollection presents them to view;
The *Orchard*, the meadow, the deep tangled wild-wood,
And every loved spot which my infancy knew.
The gold cheeked apple,
The ruby red apple,
The sweet tasting apple,
That hung on the tree.

Modern science has condemned the song describing the *Old Oaken Bucket*, of which the above stanza is a metaphor, as a menace to health, but the delicious apple so dear to the active boy remains as one of Nature's best provisions, in the way of fruit, for the use of mankind. What risks of dogs and guns venturesome boys have taken for the prospect of burying their teeth in the forbidden fruit. If we can believe Biblical tradition, it was the desire for the apple which caused the downfall of Eve. Much has been written recently regarding the value of the banana as a food, but we are old-fashioned enough to believe that no article of diet in use in the temperate zone is so grateful and beneficial as the apple.

In the beginning of the last century, a simple-minded man from Pennsylvania passed through the western country, distributing choice varieties of apple seeds, and was known only by the name of Johnny Appleseed. This person probably did more good for the early inhabitants than many a more pretentious individual, and while his labors were scarcely rewarded during his life the memory of his good works remains.

The full value of the apple was not appreciated until a few years ago, when there was almost a complete failure of the crop in the middle states, and the poor were unable to purchase the high-priced product coming from the far Northwestern states, which have been found to have a soil and climate especially adapted for apple culture. Some of this Northwestern fruit is selling even now at a higher price than the orange of California or Florida, and really the fruit is more nourishing than the tropical product. Made into pies or sauce, baked or eaten raw, the apple is grateful and acceptable to most palates, and of a distinct medical virtue when it comes to the treatment of constipation. For this latter purpose it should not be pared. An old servant of our family who had lost her teeth by salivation, was able to partake of the raw apple by scraping it with a heavy spoon. Where the apple is eaten there can be no scurvy.

The value of apple cider and apple vinegar should not be forgotten. It is said that the "jag" obtained by the over-indulgence in "hard cider" is one of the worst obtainable.

In these days of fads it is important that we do not neglect the old-fashioned fruit, and instead of running after something new, learn to improve the flavor of the apple; urge that the farm orchard be kept up, and the use of the delicious apple be encouraged in every household.

NOTICE OF FEDERATION OF STATE MEDICAL BOARDS

The Federation of State Medical Boards will hold its annual meeting at the Congress Hotel, Chicago, on Tuesday, February 25, 1913.

Essayists, eminently qualified, will prepare papers on the following subjects:

"Is Universal Reciprocity to be Desired?"

"Should Medical Boards Require One or More Years of College Work Preliminary to the Study of Medicine?"

"Should One or More Years in a Hospital be Required for Admission to the Examination for Medical Licensure?"

"Rules and Regulations Governing Examinations for Medical Licensure."

"Qualification of Examiners."

"What Fee Should be Required for the Examination?"

"Benefit of Having a Single Federation of State Medical Boards and Method of State Board Record Keeping."

"Means of Keeping Politics out of State Board Affairs."

These topics are all of practical and vital interest to medical colleges, medical examining boards, the profession at large and the public.

Those contributing the papers on these subjects come with years of experience, and no medical board can afford not to be represented. An earnest and cordial invitation to this meeting is extended to all members of state medical examining and licensing boards, teachers in medical schools, colleges and universities; delegates to the Council on Medical Education of the A. M. A., to the Association of American Medical Colleges and to all others interested in securing the best results in medical education and legislation.

The officers of the Federation are Arthur B. Brown, M.D., President, New Orleans; George H. Matson, M.D., Secretary-Treasurer, Columbus (State House), Ohio; James A. Duncan, M.D., Chairman Executive Committee, Toledo.

THE CANCER PROBLEM. IS IT BEING SOLVED?

The cancer problem is of course recognized as the one great mystery which has not been solved by medical scientists. The number of institutions and men working to solve the riddle is, however, very large, and there are indications that possibly some advance has been made. One of those who seems to be approaching a solution of this riddle is Professor

Fichera, of Rome, whose work was described, in brief, at Dr. Murphy's Clinics recently by Professor Bastianelli, of Rome. As this subject is of great interest, with the consent of W. B. Saunders Company, publishers of Murphy's *Clinics*, we give the main part of the remarks made by Professor Bastianelli:

I will speak especially of the work of Professor Fichera, the young man in Rome, who has devoted much of his life to the investigation of carcinoma. What is the origin of carcinoma? We do not know.

Professor Fichera has carried on a series of investigations for the purpose of studying how embryonal tissue grows when implanted into rats. If you implant embryonic tissue into rats, it grows for a while, but after a certain time the tissue is destroyed completely. There is no possibility of producing experimentally a tumor by injecting embryonic tissue into a living animal, but it is possible to make the grafts grow for a certain length of time or to make them grow less rapidly or to prevent or stop their growth in changing some conditions of the experiment.

For instance: In animals previously grafted the new graftings are less and less apt to grow. It seems as though the animal had acquired an immunity against the embryonal tissue. This was proved not to be due to antibodies in the blood-serum. During the involution of the first grafting it was impossible to see that the cells died through dissolution or autolysis, and it was thought that this process was providing the organism with substances capable of having an elective action on the cells of the new graft. In fact, preparing a liquid by leaving for a certain time aseptically embryonic tissue in salt solution, that is, in making an autolysis or dissolution of this tissue and then injecting it into rats successfully inoculated and having grafts in full growths, it was possible to see these grafts disappear completely. From that came the idea of trying the same in rats grafted with the so-called spontaneous cancer, which, biologically, runs in many ways similar to the embryonic tissue grafting. The results were identical, and it was possible to stop and to cure animals having big growths which would have ended fatally, but not to immunize them against a tumor graft. The ulterior investigations of the factors which may favor or change the conditions of growth of embryonic tissue or tumor grafts have proved that these factors must be looked for in nutritive and formative substances produced by organs or glands of the body. Some of them favor the growth and they may be called oncogenic—that is, having the property of stimulating tissue to grow. Some act on the contrary—that is, they stop or destroy the tumor—and may be called oncolytic. The factors must be normally present in the body and regulate the normal growth, but occasionally the production of one or the other may be disturbed. It even may happen that a change in their mutual relations takes place, so that some cells or groups of cells already disturbed in their functions may be stimulated and pushed to an abnormal proliferation or not checked in their disordinate proliferation.

The embryonic cell is the one which more easily responds to biochemic actions. In our body are found groups of embryonic cells or tissues scattered in some organ. On the other side, it may be that groups of normal cells displaced by traumas or stimulated by repeated irritation are put in an abnormal reproductive condition which is very near to that of the embryonic stage. It is easy to think that these cells will feel more deeply the influence of any perturbation in the proportion between the oncogenic and oncolytic factors, and begin to grow without any possibility for the body to stop their progress. A close and systematic investigation of these organs and glands, which seem to have a greater influence on the growth of embryonic tissue and of experimental tumors, has demonstrated that the spleen and the genital glands act in opposite direction.

If you remove the spleen of an animal and then inoculate embryonic tissue, you see that the tumor grows much quicker, and in a greater percentage the graft takes place. If you remove the testicle instead, you will notice that there

is either a complete check in the graft, or it does not grow as well as it grew formerly; and on the other side, the injection of autolyzed spleen stops a prosperous growth, while that of an ovary makes it develop quicker.

From these investigations there have been therapeutic principles established. If you autolyze spleen or embryonic tissue and inject it into the system, you may give to the organism the autolytic property which it has lost. That has been found to be very effectively accomplished either by autolysis of embryonic tissue or by autolysis of spleen tissue. Applying these principles to rat and mice cancers—experimental cancers—they have proved most effective. I may say to the physicians present that we can check the growth of cancer in a mouse or in a rat by injection of the autolytic tissue of the spleen or of embryonic tissue, but as far as man is concerned I cannot tell you anything definite in the way of results. I know of some cases in which the results were favorable, and in one at least is satisfactory so far, but the time that has elapsed is too short, and it will require a great deal more experience before reaching a definite conclusion. This case was one of abdominal removal of the uterus and ovary for cancer in a patient in whom the disease was rather advanced. This is just an experiment in a woman to be compared to experiments in animals—that is, the removal of the tumor, plus the removal of the genital glands. In removing the genital glands you remove one of the oncogenetic factors of the tumor, and adding to the organism the autolytic property of embryonic or spleen tissue, you add the constitutional conditions or oncolytic factors that have been lost. This case was seen by myself when presented to the Royal Academy of Rome. The woman made a fair recovery from a rather extensive recurrence involving the vaginal scar and a part of the parametrium.

As to the outlook in the future of these investigations, Professor Fichera thinks that possibly some day we may find the autolytic properties of our organism which defend us against the invasion of tumors, and we may perhaps find the way to utilize them from a therapeutic point of view.

The preparation of the homogeneous autolysates used by Professor Fichera is given in the January 18th issue of the *Journal A. M. A.*

The homogeneous fetal autolysates is prepared by ordinary methods, under the strictest rules of asepsis. The fragments of the fetus are placed in about twenty parts of a physiologic salt solution, a suitable quantity of thymol or phenol being added, and covered by a layer of sterilized oil or toluol. The mixture remains in the incubator at 37 C. for about two months, and prior to use its sterility is tested.

The injections vary in dose from 2 to 3 c.c. twice to four times a week, according to the patient's age, condition, individual tolerance, the bulk of the tumor, the seat of the injection, and the specific gravity of the autolysates; the latter ought to be, at the moment of their employment, a homogeneous emulsion, and not a clear superjacent mixture. The treatment extends to a variable number of months, according to the local and general condition.

Correspondence

WOODFORD COUNTY MEDICAL SOCIETY NEW ADVOCATE
MEDICAL DEPARTMENT STATE UNIVERSITY

To the Editor:—To the Governor and Members of the Senate and House of Representatives of the State of Illinois:

We, the undersigned physicians of Woodford County, Illinois, respectfully request you to carefully consider the establishment of a medical

department of the state university. Only large cities can furnish the proper clinics for a medical school, and Chicago is the ideal place for one of the great medical centers of the world. We beg leave to suggest that the state purchase the small and poorly equipped schools of this city and, after investigating the leading schools at home and abroad, organize a first-class, modern institution at Chicago. We also desire to state that in our judgment the location of this department or any portion of it at Urbana would be detrimental to the best interests of medical science.

C. B. HIGBY, Eureka, Ill., President Woodford Co. Medical Society.	H. A. MILLARD, Minonk, Ill., Secretary Woodford Co. Medical Society.
J. F. PAGE, Eureka, Ill.	WINFIELD S. MORRISON, Minonk, Ill.
F. W. NICKEL, Eureka, Ill.	PERRY M. EVANS, Minonk, Ill.
C. F. BANTA, Eureka, Ill.	F. W. WILCOX, Minonk, Ill.
N. B. CRAWFORD, Eureka, Ill.	F. C. NICKOLS, El Paso, Ill.
C. B. HEINTZMANN, Metamora, Ill.	F. H. HENDERSON, El Paso, Ill.
JOS. I. KNOBLAUCH, Metamora, Ill.	R. E. GORDON, El Paso, Ill.
E. R. MCBROOM, Lowpoint, Ill.	M. V. GUNN, El Paso, Ill.
F. B. IRELAND, Washburn, Ill.	L. E. BRATT, Roanoke, Ill.
B. N. WATT, Washburn, Ill.	F. E. BRIGGS, Roanoke, Ill.
JAMES TWEDDALE, Washburn, Ill.	S. H. RUTLEDGE, Roanoke, Ill.
FERD. SEIDL, Benson, Ill.	H. G. EICHHORN, Spring Bay, Ill.
MATTHEW EVERTZ, Benson, Ill.	F. E. NAGEL, Secor, Ill.

THE WELTMER FRAUD

ROBERTS, ILL., Jan. 23, 1913.

To the Editor:—Can you give me any information regarding an institution in Nevada, Mo., by the name of Weltmer's Institute of Psychotherapy? Is it not listed as a medical fraud?

Thanking you in advance for information, I am,

Yours very truly,

J. A. COLTEAUX, M.D.

Dr. Colteaux is correct in his belief that the Weltmer Institute of Missouri has been listed as a fraud, and we understand that delivery of mail is prohibited to this institution by the United States authorities.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY

The Adams County Medical Society met in regular session, on Monday, Jan. 13, 1913. In the absence of the president and first vice-president, the meeting was called to order by second vice-president, Dr. C. R. Bates. Among the communications read, was one from Dr. Harold N. Moyer, in reference to the Defense Fund of the State Society. This was the subject of much discussion.

Dr. Christie made a motion, seconded by Dr. Ericson, that this society declare itself in sympathy with the objects of the letter. Carried.

Dr. Center amended this motion with the substitute motion that the secretary be instructed to inform the medico-legal committee, that the Adams County Medical Society is in favor of the Illinois State Medical Society, through its defense committee, carrying on this work, and working out an equitable indemnity plan. Carried.

Dr. F. B. Parker was elected to membership. A membership application was read from Dr. Everett W. Sykes. Luncheon was enjoyed at the Hotel Quincy.

In the afternoon Dr. H. T. Duffield, of Pittsfield, secretary of the Pike County Medical Society, addressed the society on "How to Resuscitate the New-Born Child." The talk was practical, interesting and instructive. The method described is original and this makes it of more value. The Doctor was given a rising vote of thanks for his excellent paper and an apology for the small number present. Our members are very busy at present and have no time to attend meetings.

ALEXANDER COUNTY

The Alexander County Medical Society held its regular monthly and annual business meeting at the Commercial Club Rooms, in Cairo, December 19. A majority of the members of the society attended. Under clinical cases, Dr. G. H. McNemer presented the history of luetic affection of the stomach in a man 35 years of age. The patient had done well on one intravenous injection of salvarsan. The doctor stated that he had recently investigated the question of whether or not syphilographers were abandoning the use of salvarsan and had found they were not. The case and the salvarsan treatment of syphilis were discussed by Drs. Dodds, McManus and Bondurant, who presented a case in which this affection was secondary to a trouble of the antrum. He had relieved the tension by a posterior sclerotomy about two weeks previous, and the vision had risen from absolute blindness to 20/80.

Dr. Dunn presented the subject of glaucoma in a general way original with himself, and several cases taken from his records to illustrate the various kinds and causes of glaucoma. He also gave a history of a typical case of primary inflammatory glaucoma with a typical history of prodromes that he then had in charge.

The officers of the society made their annual report. The secretary-treasurer's report showed that two-thirds of the eligible physicians of the county were members of the state and county societies, and 25 per cent. members of the A. M. A. The society was free of indebtedness and had a small cash balance in the treasury. There were eleven monthly meetings during the year.

Drs. C. P. Spann of Thebes, and O. M. Dickerson, of Miller City, were received into membership.

The secretary read a letter to the society showing that Dr. J. B. Murphy, ex-president of the A. M. A., had accepted an invitation to deliver a public health lecture in Cairo, February 5, under the joint auspices of the Cairo Woman's Club and the County Medical Society.

The society elected the following officers for 1913: president, Dr. J. B. Hibbitts (reelected); vice-president, Dr. Flint Bondurant (reelected); secretary-treasurer, Dr. Jas. W. Dunn (reelected); delegate, Dr. S. B. Cary; alternate, Dr. G. H. McNemer; member board of censors, Dr. W. F. Grinstead, all of Cairo.

The president deferred the matter of appointing the committee on public health and legislation to a future date.

Dr. Dodds called attention to the good work that the Department of Agriculture of the State University, the State and County Farmer's Institute, the Department of Household Science, The Educational Propaganda for Good Roads, etc., were doing. He introduced resolutions endorsing this work which were adopted by the society. The society then adjourned to the luncheon table.

BOND COUNTY

The Bond County Medical Society held its annual meeting in Greenville, Jan. 9, 1913, when the following officers were elected: president, Dr. H. D. Cartmell, Greenville; vice-president, Dr. O. C. Church, Woburn; secretary-treasurer, Dr. E. S. Clark, Greenville; board of censors, Drs. E. A. Glasgow, Mulberry Grove; A. M. Keith, Greenville; J. C. Wilson, Greenville.

The next meeting will be held at Greenville in April. In June Bond County will join with Fayette County in a picnic meeting, later on an autumn meeting, and then the annual meeting in December.

BOONE COUNTY.

The quarterly meeting of the Boone County Medical Society was held Tuesday evening, Jan. 14, 1913, at Belvidere, Dr. R. B. Andrews presiding. The following officers were elected: president, Dr. W. G. Hawkey; vice-president, Dr. Alden Alguire; secretary-treasurer, Dr. H. E. Delavergne; censor, Dr. George Markley—to fill out the term of Dr. Herbert, who has removed from the county; censor for three years, Dr. R. B. Andrews; delegate, Dr. A. J. Markley. The committees are to be appointed by the new president.

Resolutions of respect and condolence in view of the demise of Mrs. Butterfield, wife of Dr. Willis Butterfield, a member of the society, were adopted.

CHAMPAIGN COUNTY

The annual meeting of this society was held December 28, with twenty-eight members present. The following officers were elected: president, Dr. C. D. Gulick, Urbana; vice-president, Dr. T. J. Exton, Urbana; secretary-treasurer, Dr. Jennie Lyons, Champaign; board of censors, Drs. W. L. Gray and G. W. Rice, Champaign; Dr. J. S. Mason, Urbana; delegate, Dr. A. S. Wall, Champaign; alternate, Dr. T. J. McKinney, Gifford; medical defense, Dr. W. F. Burres, Urbana.

CHRISTIAN COUNTY

At the meeting of the Christian County Medical Society, Jan. 16, 1913, Dr. L. H. A. Nickerson, president of the state society, and Dr. Lewis Wine Bremerman of Chicago were present. Dr. Nickerson read a splendid paper on "Lobar or Croupous Pneumonia," and the paper was freely discussed by several of the members present, but the field was so well covered that little comment aside from commendation of the paper was heard.

Dr. Bremerman's paper was on "More Practical Things in Genito-Urinary Diagnosis from the Standpoint of the General Practitioner." This paper was also very much appreciated and was a most worthy effort on the part of the author. The discussion was not so free on this paper but the demonstration of the use of the cystoscope was of great interest to all present.

Dr. Bremerman also spoke at night at a public health meeting. The night was very bad as the rain poured down but the audience was a good one and from the comments I have heard I think it was highly appreciated.

The list of newly elected officers is as follows: President, Dr. D. K. Cornell, Taylorville; vice-president, Dr. G. L. Armstrong, Taylorville; secretary-treasurer, Dr. D. D. Barr, Taylorville; delegate, Dr. G. L. Armstrong (elected last year); alternate, Dr. T. A. Lawler (elected last year); clerk of Taylorville; legal committeeman, Dr. J. N. Nelms, Taylorville; public health committeeman, Dr. J. P. Simpson, Palmer; censors, Drs. Armstrong, Carrol and Nelms, all of Taylorville. There were three members elected and we will probably have others soon.

D. D. BARR, Secretary-Treasurer.

CLARK COUNTY

The Clark County Medical Society met, December 18, in the office of Dr. Wilhoit, at Martinsville, Ill. Members present were: Drs. S. C. Bradley, Bruce, Johnson, Boyd, Wilhoit, Weir, Rowland, and Lewis. Dr. Doak was a visitor.

Dr. R. B. Boyd read a paper on "Diseases of the Lungs," discussing bronchopneumonia in detail, etiology, symptomatology, pathology and treatment; then he took up lobar pneumonia in the same manner. Many important points were made on this very timely subject. All participated in the discussion. From the observations, experiences and opinions presented, each doctor was able to get many valuable points, helpful in the management and treatment of this very frequent and fatal class of disease.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting, Nov. 13, 1912

A regular meeting was held, Nov. 13, 1912, with the following program:

1. "Bronchial Asthma." Joseph M. Patton.
2. "Commonly Overlooked Factors in the Management of Heart Cases." Charles Spencer Williamson.

Regular Meeting, Nov. 20, 1912

A regular meeting was held, Nov. 20, 1912, with the following program:

1. "Exhibition of Patients." Truman W. Brophy.
2. "The Wertheim Extended Abdominal Radical Operation for Cancer of the Uterus." (By invitation.) Prof. William Wiebel, Vienna.

EXHIBIT OF PATIENTS

TRUMAN W. BROPHY, M.D., D.D.S.

Mr. President and Gentlemen of the Society: The first patient I exhibit to you is a woman, aged 35 years, for whom I removed a section of the mandible from the cuspid tooth to the glenoid fossa, for the removal of a tumor. This operation was performed intraorally.

The bone was divided just posterior to the cuspid tooth by the use of a saw revolved by a surgical engine. The incision was made along the anterior border of the ramus, down to the body and forward to the cuspid tooth.

The soft parts were removed from the surface of the bone nearly up to the coronoid process, when the bone was seized by strong forceps and drawn downwards and twisted until it was separated from the glenoid fossa and removed.

Immediately, the space occupied by the bone was packed. Forty-eight hours later the packing was renewed. The fourth day, the packing was again removed and the cavity filled with wax. At the same time the lower teeth of the opposite side were firmly wired to the teeth of the upper jaw.

The tissues surrounding the wax were kept clean by careful irrigation, and the bone held quietly in place, extending over a period of five weeks. At fre-

quent intervals this wax was shaved down. In the meantime granulation was filling the cavity.

The object in using the wax was to prevent the immediate contraction of the parts and consequent shrinkage and depression of that side of the face.

The wiring of the teeth together held the remaining part of the mandible in its correct position until cicatrization was complete upon the side from which the bone was removed. When cicatrization was completed, with the mandible in its proper place, normal occlusion of the teeth of the remaining portion of the mandible with the teeth of the upper jaw was maintained, enabling patient to properly masticate food.

Without providing means to prevent the extreme contraction of the face following the removal of a large section of the mandible, especially when disarticulated at the glenoid fossa, and without fixing the teeth of the remaining portion of the mandible to the upper jaw, a great deformity follows. The symphysis is diverted towards the side from which the bone has been removed, shrinkage of the face occurs, and by traction of the muscles, the remaining portion of the mandible is so far removed from its normal position that occlusion of the teeth and further mastication of the food is impossible.

By pursuing the course that we did with this patient, the following results have been obtained:

First: A scar has not been made upon the side of the face for the removal of the diseased bone.

Second: There has been no perceptible shrinkage of the face, since the wax held it in position during the development of new tissue to occupy the space left by the removal of the bone.

Third: The occlusion of the teeth of the remaining portion of the mandible with the teeth of the upper jaw is normal, and mastication is not interfered with.

Fourth: The facial contour and expression has undergone no marked change.

The second patient, a man aged 64 years, came to me in 1908, suffering from a swelling of the right side of the mandible, in the region of the second molar tooth, which was loose and about which there was a copious flow of pus.

On examination I found the lingual surface of the bone denuded and discovered the presence of exuberant granulations. He was under my observation a short time when after a microscopical examination of a section of the tissue, carcinoma was found to have developed.

The next step taken was to remove all of the diseased tissue. You will observe no external incision made here to expose the bone. An incision was made within the mouth, extending from ramus to ramus. The bone was thus exposed to view, carrying the entire body of the bone out of the mouth.

The entire body of the bone was taken away except a thin rim which forms its lower border. Then it was replaced within the mouth and frequently irrigated. The wound healed kindly and the patient made a good recovery.

Subsequently, however, it was necessary to remove an area of diseased tissue in the soft parts; and still later, about one year subsequent to the first operation, he had the misfortune to be thrown from a wagon, sustaining a compound fracture of the bone.

This gave us a great deal of trouble, but finally the wound healed, and there has been no tendency towards recurrence of the growth in the past two years.

Prior to the beginning of the disease, he weighed 200 lbs. When we operated, he weighed 135 pounds. At the present time he weighs 210 pounds, his appetite is good, and he is now in excellent health.

A surgeon of excellent repute proposed to remove the entire mandible for this man, a surgical procedure which necessarily leaves an irreparable deformity; but the successful management of this case demonstrates quite clearly that carcinoma of the mandible may be successfully treated without making external incisions for its removal, and without removing the entire bone.

It is true, sufficient time has not elapsed to insure against recurrence of the disease, but the healthy condition of the parts and the patient's return to perfect health and vigor, strongly indicate that the growth will not recur.

The third patient is a woman, aged 35 years, for whom an operation was made for the removal of carcinoma of the parotid gland, together with a section of the mandible from the second bicuspid tooth to the glenoid fossa.

The feature of this operation to which I especially want to call your attention is that we have succeeded in removing this gland entire without division of the seventh or facial nerve, and by so doing, we have not caused facial paralysis.

This operation was performed by first exposing and ligating the external carotid artery, second, exposing the facial nerve, carefully dissecting it out with blunt instruments, and then removing the gland together with the portion of the mandible.

The incision, in exposing this gland, was made in the shadow line, posterior to the ramus and beneath the lower border of the mandible. The tissues were reflected upwards, the bone and gland thus exposed, and removed.

The patient made a good recovery and perfect motion of the face has been preserved.

The result in this case demonstrates that surgical teachings, viz., that the removal of the parotid gland is followed by facial paralysis, are not well founded. I do not find in the literature of the surgery of this operation, any other statement than that it is followed by facial paralysis.

Following the removal of the bone, the traction of the remaining part of the mandible draws the lower teeth out of occlusion with the upper ones. To overcome this defect, the wiring of the teeth of the lower jaw to the teeth of the upper is necessary, as in the case first described to you.

These teeth should be kept in occlusion until cicatrization is completed on the side from which the bone was removed, when we may expect normal occlusion to be maintained upon this side.

A front view of this patient exhibits no mark following operation. I regard it very important when an external incision is unavoidable, to make it in the shadow line of the face, and reflect the tissues upward to expose the diseased tissues. The deformity of extensive scars of the face may thus be avoided.

Regular Meeting, Nov. 27, 1912

A regular meeting was held, Nov. 27, 1912, with the following program:

1. "Clinical Observations of Carbonic-Acid Baths on the Circulation." (By invitation.) John Henry Honan, Bad Nauheim, Germany.
2. "The Evolution of the Bacteriology of Urology," G. Frank Lydston.
3. "What Should be Done with Tuberculous Puerperae and Their Children?" Charles S. Bacon.

DISCUSSION ON THE PAPER OF DR. HONAN

Dr. Alfred C. Croftan: I have never been able to convince myself that the effect of carbonic acid-brine baths is greater or more certain in Nauheim than in the home bath-tub. For the effect after all is chiefly thermic and not due to any chemical properties inherent in the Nauheim mixture of salts. That sufferers from chronic disorders, especially individuals accustomed to lead the strenuous life, fare better in any watering place than at home is clear; but this is due largely to the psychic effect of undergoing a "Cure" in a resort famed for the treatment of such disorders; it is due, furthermore, to the complete respite from daily worries and tribulations and exertions at home; to the fact that the patients are making it a business to take care of themselves and that they have nothing else to do. The advantage, of course, of enjoying the professional services of physicians who are especially trained and experienced and who can give these people abundant attention, because they are being abundantly compensated, must not be underestimated.

When a trip to Nauheim cannot be undertaken an efficient home arrangement for taking Nauheim Baths can easily be installed. An half-inch lead pipe, bent to fit around the bottom of the bath-tub, perforated with pin-hole openings an inch apart, and attached to a compressed carbonic acid gas cylinder, procurable through any druggist furnishes the gas apparatus. A pound or two of rock-salt with an ounce or two of calcium chlorid to a bath-tub full of water of the proper

temperature furnishes the brine bath. An electric fan to blow away the carbonic acid gas rising to the surface of the water, an ice cap for the head and a bath thermometer complete the installation. If need be an "hourly" nurse, trained in giving the proper treatment during and after the bath can be secured, or a member of the family can easily be trained. This outfit can be procured by any family in even moderate circumstances, certainly in America where adequate bath facilities are a necessity, not a luxury, as abroad, and where the populace bathes as a matter of fact and not as a matter of conversation. The comic supplements, by the way, and the comedy stage to the contrary notwithstanding, the English gentlemen, in my experience, speaks as little of his "tub" as his American confrère of his bath.

The main advantage of employing hydriatric measures wherever possible in the place of drugs, lies in this, that drugs can be kept in reserve for emergencies; they will display greater potency when they operate in a virgin soil that is not impregnated with medicines. Much smaller doses at all events will generally be required to produce the desired result. I refer especially to heart tonics and vasodilators.

The chief effect of carbonic brine baths is upon the action of the heart and the blood-pressure. The thermic effect, reinforced and prolonged by the CO_2 and the salt, varies according to the temperature of the bath that is maintained, i. e. whether it is indifferent, i. e. equal to the body-temperature, sub-indifferent or super-indifferent. A fall in the blood-pressure can be brought about both by baths below and above the body-temperature. The warmer baths are preferable and safer in arterial disease. For the lowering of the blood-pressure by sub-indifferent baths is the result of a "tonic" dilatation of the peripheral vessels, whereas after warmer baths the dilatation is "atonic," relaxed. Immersion in a cool bath, even a few degrees below normal, produces at first a contraction, followed promptly by a dilatation of the peripheral vessels, called the reaction (later again contraction, because the tone is preserved), whereas warmer baths produce at once a cutaneous hyperemia without preceding blood-vessel contraction and, if continued, true relaxation of the muscular coats of the peripheral vessels with a corresponding fall of the blood-pressure; the effect of super-indifferent baths is also more prolonged. Moreover, heat, if applied for a sufficient length of time ultimately produces dilatation of the vessels of the deep circulation, whereas the dilatation of the superficial blood-vessels produced by sub-indifferent baths is accompanied by contraction, with high rather than low pressure of the central vessels, where low tension is most desired and high tension most dangerous.

In chronic nephritis with cardio-vascular changes, moreover, the vasomotor tone is, as a rule, reduced or perverted. This fact of vaso-motor instability in chronic renal disease is not sufficiently appreciated; hence any measure, like cool baths, that throws additional labor upon an already fatigued and incompetent vasomotor apparatus, is irrational and dangerous and very liable to fail of the effect it is intended to produce.

Even though the action of these baths is largely thermic, the addition of salt to the bath and the insufflation of gas through the water is valuable. A sense of warmth and a reddening of the skin are noted sooner. The salt, moreover, to some extent "soaks" into the skin and grants a prolonged effect even after the patient is out of the bath. The gas adheres to the skin in fine bubbles, so that in thousands of places areas covered with water are in close proximity to areas covered with gas; then the gas areas become covered with water as the bubble detaches itself. This implies a constant alternation of thermic influences over the whole surface of the body and no doubt creates a greater vasomotor effect. Some CO_2 is also absorbed and stimulates deeper respiration, as manifested by an increased exhalation of CO_2 without a corresponding consumption of O.

That strict individualization is necessary, careful regulation of the frequency, the duration, the temperature of the baths according to the effects and reactions produced is self-evident. Nowhere is routine more dangerous or more useless.

A great deal of harm can be done by these baths. If the physician has no time or inclination to study his patient's reaction at least a few times before, during and after the bath, he should omit this form of treatment altogether or delegate it to some one who knows what to look for and how to control the remedy. This applies particularly to patients with myocarditis, arteriosclerosis and chronic cardiorenal affections (Bright's). And here above all things one must be sure that it is desirable to reduce the blood-pressure. The patients often feel worse and are worse when the arterial tension falls or is reduced. The heart has accustomed itself to operate against a certain high pressure, the elevated tension is a process of conservation; when the pressure comes down the heart "races" just as the engines of a steamer gauged to turn a screw against a certain pressure of water, race, and rack the ship, when the screw comes out of the water.

Regular Meeting, Dec. 4, 1912

A regular meeting was held, Dec. 4, 1912, with the following program:

1. "Frequency and the Importance of Diagnosis of Cervical Rib." Joseph L. Miller.
2. "Intratracheal Insufflation Anesthesia. With Demonstration on Animals." (By invitation.) B. Merrill Ricketts, Cincinnati, Ohio.

CHICAGO MEDICAL SOCIETY, ENGLEWOOD BRANCH

Regular Meeting, Jan. 7, 1913

If a good beginning is an indication of success then the success of Englewood's meetings for 1913 are assured. The first meeting of the year was held on the evening of January 7, at the Englewood Hospital, the subject being a "Symposium on Diseases of the Gall Bladder and Bile Tracts." Over fifty (53) "live wires" turned out and some very brilliant "sparks" were in evidence. The papers were extremely fine, covering the subject thoroughly, very instructive and interesting, and brought out discussions of the highest order.

Dr. C. F. Weir, in a very entertaining and thorough manner, took up the subject of "Symptoms and Diagnosis of Diseases of the Bile Tracts," describing the various stages from the quiescent stage of early simple infections to the very active stages, marked by gall-stone attacks and inflammation of tracts and surrounding structures, taking up the sequelae and analyzing the different stages as to symptoms and diagnosis.

Dr. F. C. Eggert read a most excellent paper on the "Surgical Technique of the Bile Tract." He stated that in his opinion successful operation upon the bile tracts was, perhaps, the most difficult on account of the many complications. His paper was further enhanced by some beautiful drawings, which he used to explain points in the technic, and which were greatly appreciated by his hearers. He also presented a specimen of the liver, nicely dissected, showing the normal anatomy of the bile tracts.

Dr. Joseph L. Miller, who was to have opened the discussion, was unable to be present, much to our regret. The same being true as to Dr. W. S. Hector.

Dr. F. A. Weatherford opened the discussion, reporting a case of Rupture of the Gall-Bladder, upon which he had recently operated.

Dr. L. J. Osgood gave an interesting talk, stating that he suspected gall-bladder trouble in any case of "stomach trouble" coming on after the age of forty.

Dr. W. H. Buhlig, as usual, gave an interesting discussion reciting a case of gall-bladder disease in an alcoholic showing diabetic symptoms (sugar in urine), multiple neuritis, pancreatitis, etc.

Dr. Carl Langer gave a most interesting discussion with special reference to jaundice, a subject which Dr. Miller was to have discussed, but which was ably handled by Dr. Langer, who also brought out many other good points.

Dr. J. H. Hess spoke very entertainingly upon the non-operative cases and gave some valuable suggestions.

Others, too numerous to mention, entered upon the spirit and discussed, bringing out good points. Among them were Dr. H. Betz, president of the Stock Yards

Branch, Drs. V. D. Lespinasse, H. H. Mather, J. J. Moorhead, McClintock of the South Side Branch, S. T. Felmlee, R. M. Parker and others.

A meeting from nine until midnight and not a dry moment. What more can you ask? Come next time and see for yourself.

A. G. BOSLER, Secretary.

Twelfth Annual Banquet and Ladies' Night, Jan. 20, 1913

The twelfth annual banquet and ladies' night of the Englewood Branch which was held on the evening of Jan. 20, 1913, at the Stock Yards Inn, 42d and Halsted streets, fully sustained the prediction that it would prove to be the banner banquet. Englewood firmly believes in progression, and that each year may prove to be better than the previous is our ardent object. Hard work, backed by originality and double-backed by hearty and cheerful cooperation of our members, opens the gateway to success. It is, indeed, fitting that the twelfth annual banquet, presided over by Dr. C. Hubart Lovewell, who had previous to his election to the presidency, served, faithfully and ably, the society as their secretary for eleven long years, should be the banner banquet. That the banquet was a huge success was the unanimous opinion of each and every one of the one hundred and sixty-two present, and everybody well pleased. Success? Well, I guess.

To the banquet committee, of which Dr. J. W. McGuire is chairman, great credit is due, likewise to the program committee, of which Dr. J. H. Hess is chairman, and to them the satisfaction of having "put over" a brilliant success is ample reward for their ardent labor. To each and every one present we extend our sincere thanks for their hearty cooperation, realizing that without their help success would have been impossible.

Great credit is due Mr. Hill of the Stock Yards Inn for the able and efficient manner in which he handled the large crowd. The service was all that could be asked, the food the very best and served to the "Queen's taste" (and there were many Queens present) and praised by all.

The entertainment was in the form of a cabaret banquet, distinctly Englewood in style, in fact everything pertaining to the banquet was Englewood, even to the visitors from the Stock Yards and South Side Branches, for they are friends of Englewood.

Depew's famous orchestra and the celebrated Ingleside quartette—both Englewoods. If you doubt it ask Dr. McGuire. Why, Mr. Hill informs me that the steer from which that delicious beef was obtained was an Englewood steer, fed on the home grown corn raised on the farm of Dr. H. H. Mather, and located in the southern part of Englewood. Likewise that most delicious fish was caught by an Englewood man, in fact everything on the big bill was Englewood, home grown, except those fine blue points, and even they were shipped, choice-picked, for Englewood. The music furnished by the orchestra and the singing of the quartette was all that could be wished. Their efforts were enjoyed and appreciated.

Of special mention was the sweet harp playing by a young Englewood lady, Miss Helen Langer, who most beautifully executed a solo which was greatly appreciated. She is the daughter of an ex-president of Englewood, Dr. Carl Langer. Dr. J. A. Waska, esteemed member of Englewood, gave a most excellent exhibition of what the violin can do when in the hands of a master. Both Miss Langer and Dr. Waska are masters of their respective instruments and their playing came as a revelation, completely captivating the good crowd.

Ah! Some one asks, "How about that fine address of Dr. Woods Hutchinson, of New York City?" Answer, "Englewoods." If you never knew it before please stand informed that Dr. Woods Hutchinson is a member (Honorary) of the Englewood Branch. Dr. Hutchinson's address was pregnant with wit and humor, most instructive, interesting and entertaining, appreciated and applauded by all.

And—Well they danced and had a good time. Almost everybody was there. You didn't get there. Well, your loss. You missed it.

A. G. BOSLER Secretary.

CHICAGO OPHTHALMOLOGICAL SOCIETY

Regular Meeting, May 20, 1912

The President, Dr. Thomas Faith, presiding.

SYMPOSIUM ON CHRONIC GLAUCOMA

ETIOLOGY

Dr. Martin H. Fischer's (Cincinnati) address on the "Etiology of Chronic Glaucoma" was, in part, as follows: Glaucoma is an edema of the eyeball and all the clinical signs of this pathologic entity are referable to this. The eye, like any other tissue in the body, holds normally a certain amount of water. The amount thus held is determined by the hydrophilic colloids of the eye (the proteins chiefly) and the state in which these exist (normal hydration of the tissue colloids). Edema is a condition in which the amount of water thus held is increased, in other words the hydration capacity of the colloids has been increased. In glaucoma the hydration capacity of the tissues of the eye (including the vitreous and aqueous humors) is increased. Various conditions are able to increase the hydration capacity of a protein colloid and so lead to an edema of the affected part. A most important factor in this regard, if not the most important, is an increase in the amount of acid present in the part. Any circumstance therefore which will lead to an abnormal production or accumulation of acid in the eye will lead to the signs and symptoms of glaucoma. What are ordinarily classed as causes of glaucoma (arteriosclerosis, circulatory disturbances, kidney disease, hard mental or muscular work, worry, high protein diet, diabetes with acidosis, local circulatory disturbances in the eye, intoxications of a general or local type which affect the eye, injuries and operations affecting the eye, cold, starvation, etc.) all have this in common, that they lead to an abnormal production or accumulation of acid in the eye. In consequence of this abnormal acid content the hydration capacity of the ocular colloids is raised and a glaucoma results, not because water is pushed into the ocular colloids, but because these suffer changes which make them suck in water from any available source (they swell). Obliteration of the filtration angle is not the cause of glaucoma, but a consequence resulting from the fact that in glaucoma the colloids behind the lens swell more than those in front, and so the lens and iris are crowded forward. As the swelling progresses the glaucomatous eye tends to make itself worse, for in swelling it compresses the blood-vessels within the eye (including those in the ciliary body) and so adds to its already precarious state the superimposed effect of a lack of oxygen due to defective blood-supply; and so by the resulting further abnormal acid production and accumulation a vicious circle is established. Eserin and other drugs which by contracting the iris open up the vessels in the ciliary body and so give a better blood-supply, may therefore at times be successful in removing a last straw which makes an eye just on the edge of a glaucomatous attack go over; on the other hand atropin, cocain and similarly acting drugs have a reverse effect favoring not only a compression of blood-vessels, but adding a direct toxic effect which in the end leads to an abnormal production and accumulation of acid.

In the treatment of glaucoma we must first get as clearly as possible before our minds all the conditions which in our patient are leading to an abnormal production or accumulation of acid in the eyeball. Rarely will only one etiologic factor be responsible, and rarely will we find these etiologic factors to be limited to the eye only. An abnormally high acid content may be induced in an eye quite as easily through an abnormal acid production which results from too hard muscular work, a leaking heart or a bad dietary regime as through an arteriosclerosis that manifests itself particularly markedly in the circulatory apparatus of the eye, an inflammation of the ciliary body or a cataract extraction.

When we have removed as many of these conditions as possible, we then meet the effects of those which we cannot remove. Our therapy comes down to this. We need to give alkali to neutralize the acids present in abnormal amounts; we need to increase the salt content in the tissues of the eye, for all salts, including

such natural salts as sodium chlorid, decrease the amount of water that can be held by any protein swelling in the presence of an acid; and, finally, we need to give water to wash out the acids (and other substances) which are capable of increasing the hydration capacity of the ocular colloids.

In actual practice this is accomplished as follows. As the patient is usually in the midst of a glaucomatous attack at the time that we see him, we describe the handling of this picture first.

1. It is our purpose to dehydrate the swollen eye as rapidly as possible. To accomplish this end we need to raise the concentration of alkali and salt in the affected eye, to do which we may use either local or systemic means or both. We are offered the choice here of either treating the eye directly or getting the whole patient under the influence of salt and alkali and incidentally his eye. To obtain a dehydration of the eye by systemic means we stop the intake of water by mouth and, observing the rules that have been frequently laid down before, we inject slowly into the rectum by the drip method and have the patient retain a liter, or, if necessary, two liters of the following alkaline, hypertonic sodium chlorid solution:

Monohydrated sodium carbonate	4.1 grams
Sodium chlorid	14.0 grams
Distilled water	1000. c.c.

When the injection is properly given the alkali and salt content of all the tissues of the patient's body is increased by this means, and the swollen eyeball shrinks. In from one to three hours the glaucomatous eye will then have returned to its normal tension. During the past year he had found a proper utilization of this scheme of treatment so effective that he had relied upon it entirely and so has largely given up the use of subconjunctival injections of sodium citrate.

Once the tension in a glaucomatous eye has been brought down the patient must be kept from getting renewed attacks by keeping his metabolism constantly well toward the alkaline side. This means that the patient must be taught how to inhibit his acid producing factors while at the same time he is put under the influence of a sustained administration of alkali, salts and water. Only in this way can an eye on the verge of a glaucomatous attack from such a condition as an arteriosclerosis of the blood-vessels supplying the eye be kept from going over into a frank attack as the acid content in the eye is pushed beyond these tolerable limits by hard work, mental worry, dietary indiscretions, etc.

2. Local treatment in glaucoma resolves itself into an administration subconjunctivally of harmless salts which are particularly powerful in reducing the hydration capacity of swollen colloids. A freshly prepared sterile sodium citrate solution (5.41 per cent. solution of the ordinary chemically pure $\text{Na}_3\text{C}_6\text{H}_5\text{O}_7 + 11 \text{H}_2\text{O}$) is used. Enough must be injected to gently distend the subconjunctival tissue (10 to 15 drops). The short lived pain following such an injection may be relieved by alternate hot and cold compresses. Failure to get a prompt reduction of tension by such means indicates that the solution was of wrong composition, or that enough was not injected, or that the systemic acid content is so high that use of the salt subconjunctivally does not even temporarily prove effective.

What is known as glaucoma in the eye is identical with the series of changes which in the kidney we call nephritis, and the principles of treatment governing both conditions are the same.

MEDICAL TREATMENT

Dr. H. B. Young (Burlington, Iowa), in his presentation of the "Medical Treatment of Chronic Glaucoma," expressed regret that there obtained in the literature an absence of unanimity of a definite nosology for this affection. He referred to a paper presented by himself in 1907 at the Louisville meeting of the Academy, in which he had made a plea for the adoption of Schweigger's classification, viz., that a sluggish, more or less dilated pupil and a shallow anterior chamber, no matter how quiet the eye had otherwise been, always spelled inflammatory glaucoma. In this paper he also attempted to show that the use of the term "chronic" was

misleading, because an inflammatory glaucoma which showed distinct periods of remission might be termed chronic or sub-acute as against the acute or fulminating; and in the non-inflammatory, as distinguished by changes in the posterior segment of the globe only, unnecessary, because this process is but seldom rapidly progressive. The consideration of the purely medical therapy side of chronic glaucoma Dr. Young thought might be briefly disposed of were it not for the fact that many "side issues" of such treatment suggested themselves to him as worthy of extended consideration. In this connection, he cited the complete and permanent relief with miotics of the glaucoma, immediately following cataract extraction and, in the same category, those sudden outbreaks peculiar to men of strenuous habits in middle life. He admitted that these are isolated instances and suggested, as a working hypothesis, that in those isolated instances the miotics *tided over* a condition which he had designated, for want of a better name, a "threatened reversal of ocular metabolism."

In assigning this hypothesis through analogy he had found much similarity in studying the experience of the investigators who were laboring to solve the problem of sympathetic ophthalmia. In the latter affection, he had noted that every avenue of communication had been diligently searched to find the route of infection and with no invariable result; that this line of investigation had also failed to account for the fact that a large number, possibly a majority, of those having typically dangerous wounds remained indefinitely immune. It was not until Elschnig, impressed by the association of auto-intoxication with similar ocular conditions, conceived the idea that sympathetic ophthalmia (analogy again) had an extra-ocular origin and reported his observations, that we obtained a logical or comprehensive view of the sympathetic process.

In the consideration of the possibility of the extra-ocular origin of glaucoma the essayist called attention to the fact that auto-intoxication had apparently been responsible for sudden failure of vision, without observable tissue change in some cases of the non-inflammatory variety. At the Denver meeting of the A. M. A. (1898) in a symposium on amblyopia, he had reported a series of cases, attributable to auto-intoxication. This report, he believed, was one of the earliest contributions to the subject in this country. The product of this intoxication in such cases, he held, was a nerve explosion, which writers refer to as profound emotion. On this basis, he explained the glaucoma after cataract extraction and in the man of strenuous life, the victims of exhaustion. In the latter, if we relieve him of his business cares and clear out his alimentary canal, we get results with miotics. In a similar way, he believed, the successes reported by the older writers, from the use of calomel and opium and the salines, may be explained.

From these suggestions about the origin of glaucoma, it naturally follows that its medical treatment is practicable only in the presence of the disturbed nerve function and before a reversal of metabolism is established. In his opinion the medical treatment of chronic glaucoma has not been without merit and that there is to be a more comprehensive practice of it in the light of new findings hardly is to be doubted.

SURGICAL TREATMENT

Dr. Charles H. Beard, in presenting the "Surgical Treatment of Chronic Glaucoma," laid emphasis on the point that surgical measures, in the treatment of chronic glaucoma, should be resorted to only when less radical measures are clearly contra-indicated, or have failed to accomplish the desired result. The surgical measures available he divided into two great classes, viz., the *Intra-ocular* and the *Extra-ocular*. Some of these measures have merely the relief of pain as their object, but the majority of them contemplate the reduction of intra-ocular tension; which is the predominant symptom of the disease and the source of most of the morbid manifestations.

The *Intra-ocular operations* comprise four methods: 1. Operations on the iris, designed to free the iris angle from adhesions between iris and cornea and re-establishing the natural communication between anterior chamber and Schlemm's canal. 2. The various forms of anterior sclerotomy and sclerectomy, which aim

to create channels of drainage between anterior chamber and the subconjunctival tissue. 3. Establishing a passage for the interchange of fluid between anterior chamber and peri-chorioid spaces. 4. Promote anastomosis between the deep blood-vessels of the peri-corneal region and those of the conjunctiva and subconjunctival tissues. The primary object of these various procedures, accomplished either by incision, excision or tearing away, is the restoration of normal filtration or the substitution of artificial or vicarious filtration.

In discussing iridectomy, as a measure for the restoration of normal filtration, Dr. Beard called attention to the prevailing opinion of ophthalmologists that this procedure can not be depended upon to afford relief in cases of chronic glaucoma but that it acts most favorably in the comparatively early stages of simple glaucoma, in those cases where excavation of papilla is not well established; in those characterized by considerable hypertonicity of globe or marked fluctuations in the tension, with accesses of pain, rainbow vision, by inroads upon the visual field and varying sectors of suppression of the peripheral light sense. He enumerated as positive contra-indications to iridectomy cases in which the glaucomatous process has been insidiously progressive with a marked contracted field, the patient being unable to read fine print connectedly and the nerve head changes well advanced. As a single measure he considered iridectomy contra-indicated when the fellow eye had been iridectomized unsuccessfully.

He emphasized the importance of frequent and close observations of the visual field and regarded any form of surgical intervention dangerous when the retraction nears the center at some point. In the consideration of *anterior sclerotomies and sclerectomies*, the essayist reviewed the origin of these procedures beginning with Von Graefe, who, having observed how frequently antiglaucomatous iridectomy was followed by a cystoid cicatrix, at first conceived the idea that this spongy tissue, by permitting the aqueous to filter slowly through, might exert a favorable influence upon intra-ocular tension. Von Graefe later, however, came to the conclusion that such cases gave no better results than those in which healing had been prompt and uncomplicated. De Wecker's and Stellwag's theories, in this connection, were also dwelt upon at length by the speaker. Dr. Beard recognized the fact that a cystoid scar, with or without participation of the iris, will often serve to regulate the tension; but pointed out that when the iris is incorporated the cicatrix may be a source of irritation—lead to loss of eye, the development of a sympathetic inflammation and is exceedingly vulnerable to infections from the conjunctiva or lacrymal canal. Such hazards, he pointed out, were the chief objections to all procedures designed to intentionally incorporate the iris in the cicatrix. The great desideratum he conceived to be the creation of a more or less permeable cicatrix that shall be safe and lasting.

Of the various procedures suggested, the least complicated and least harmful of all, in his judgment, is simple anterior sclerotomy. He reviewed in detail the technic of simple anterior sclerotomy according to the method of Stellwag and De Wecker. He called attention to the almost unanimous opinion of ophthalmic surgeons that it is unwise to make large incisions or openings, whatever their nature, about the base of the cornea, in chronic glaucoma. The large openings are not more efficacious than smaller ones and with the larger, complications are more frequent; the iris likely to fall into the wound, vitreous to escape, and high astigmatism develop.

In discussing the combined anterior sclerotomy. Dr. Beard referred to the advantages of conservation of the sphincter of the iris in performing the iridectomy. He considered it highly desirable to have the innermost zones of the iris intact; the pupil in such instances responding better to miotics. Of the various procedures of anterior sclerotomy the essayist dwelt in detail upon two, the method of Herbert of Nottingham and that of Bjerrum of Copenhagen.

Discussing perforating sclerectomy, he reviewed the operations of Lagrange and Holth. In considering the methods of trephining the sclera, the speaker described in detail the Elliott procedure. In this method, the spot selected for trephining should be as close to the limbus as possible; if this cardinal rule is disobeyed two dangers confront the operator; 1. He is much more likely to have

an escape of vitreous than if he obeyed the rule; and 2, he will probably fail to enter the chamber with his trephine and will have to burrow his way into it by the aid of a curette or other instrument; in so doing, he will probably, if not certainly, injure the ciliary body. As complication, when working with a small trephine, the speaker mentioned that occasionally the excised disc dropped into the anterior chamber. Young had suggested passing a loop of fine thread, by means of a tiny curved needle, through center of part to be excised and passing ends through hollow handle of trephine. The speaker presented a drawing of a trephine, original with him, which provided for a central member either with barbed spear or a serew end, for fixing the instrument, steadying the trephine and preventing the excised disc from dropping into the anterior chamber.

Of the operations to establish communication between the anterior chamber and the peri-chorioidal spaces, the speaker referred to the cyclo-dialysis procedure of Heine. Clinical data, the speaker stated, show that favorable results of cyclo-dialysis have been obtained in relatively few cases, that they are seldom lasting and that complications are, perhaps, more frequent after this than after most of the antiglaucomatous operations.

Discussing non-perforating sclerectomy, the essayist described the theory and method of its chief exponent, Bettremieux, of Roubaix, France. As to posterior sclerotomy, the speaker considered it only applicable to blind eyes with enormous tension, effacement of the anterior chamber and atrophy of the iris, with maximum pupil.

In reviewing the extra-ocular operations, the speaker referred to Jonesco's extirpation of the superior cervical ganglion, Bardal's elongation or plucking out of the external branch of the nasal nerve, Roemer's extirpation of the ciliary ganglion and optico-ciliary neurotony.

DISCUSSION

Dr. H. W. Woodruff, in opening the discussion on Dr. Fischer's paper, said: The experiments which Dr. Fischer has performed are certainly very interesting and very valuable to physicians in general and especially to oculists. Any of us, though we are not physiologic chemists, can readily appreciate that the variable affinity of colloids for water must have something to do with the pathogenesis of glaucoma. It will be of great assistance to us as clinicians, however, to constantly remember that there is no such thing as a single cause for any disease. Glaucoma is no exception to this rule. Since he was not enough of a chemist or physiologist to discuss this subject to any profit from Dr. Fischer's standpoint alone, yet without being able to prove his contention, he felt certain that while there may be cases of glaucoma due to a development of certain acids and a consequent absorption of water as has been shown, there are other theories or there is at least one other which is worthy of notice. If every case was due to the absorption of water then any case should be relieved by sub-conjunctival injections of solutions of sodium citrate. He had been using this solution since Dr. Fischer's first publication with marked results in some cases and no results in others. He thinks others must have had the same experience. It seemed to him that, without detracting from Dr. Fischer's theory, our attention could profitably be directed to Henderson's theory. Briefly he accounts for hypertension in an eye ball by two causes; first, a sclerosis of the pectinate ligament or, as he calls it, the cribriform ligament, which lessens the ability of the aqueous to escape to the canal of Schlemm; and second, an increased blood-pressure within the eye. With only one of these conditions present there will be no glaucoma but with both present hypertension is the inevitable result. Henderson explains his point by a working model. (Dr. Woodruff exhibited a chart, explanatory of Henderson's theory.) The Henderson conclusion is, therefore, that there is a predisposing factor, which is the sclerosis of the cribriform ligament and an exciting and variable factor, which is the circulatory pressure. Is it not possible that whereas Fischer's theory will explain the most acute attacks of glaucoma, Henderson's theory will better explain the more chronic and less inflammatory forms?

Dr. J. E. Colburn, in opening the discussion on Dr. Young's paper, said: The treatment of glaucoma should begin before the glaucoma occurs. There are certain eyes and certain conditions of the circulation that tend to produce glaucoma. When these conditions are known to be present or any other condition is known to exist that might favor the development of glaucoma we should direct our treatment toward them, so that the patient's general health may be put on the proper plane. Even before any sign of arteriosclerosis is noted we must bear in mind that these patients are liable to glaucoma. Glasses should be ordered or a change of glasses made and a proper position as to light, etc., maintained. These patients should avoid the excitation of profound and grave emotions. They should lead temperate and regular lives. They often come for advice, but they prefer to go on as they have and follow their own inclinations, hoping that they may not suffer from the results of their indiscretions. Therefore, it is difficult to manage these patients.

Arteriosclerosis is one of the greatest factors in the production of glaucoma. He had seen a number of cases in recent years in which glaucoma symptoms would appear under the treatment with myotics, and with proper care of the intestinal canal and general hygiene they would disappear. Dionin has been of some value in these cases. Eserin is useful in the later period of the disease. The continued use of salicylates, as suggested by Gifford, a grain per pound of body weight, and of bicarbonate of soda with an occasional dose of citrate of potassium, has given good results in the preventive treatment of this disease. However, sometimes our efforts are absolutely futile, even our best endeavors fail, and he has always hoped that perhaps the acidosis theory might help us out. Just now he was watching with interest a case in which for four years there have been occasional increases of tension, with all the symptoms of a chronic glaucoma. Under the wise management of a general practitioner, who fully understands the conditions, they subside. He saw the patient occasionally and supervised the treatment. Sometimes there was a general ocular edema, but it disappeared under appropriate treatment and the vision improved and the corneal sensitiveness returned. During the last three months he has had only three spells of increased tension. The real underlying condition in the case is a chronic albuminuria, and back of that a sclerosis.

He would like to know more about the acidosis theory. It is exceedingly interesting and he hoped it would lead to better results. He was in accord with Dr. Young regarding the preliminary treatment, believing that treatment prior to the attack was of the greatest value.

Dr. George F. Fiske, in opening the discussion on Dr. Beard's paper, said: The thing that had impressed him most was the fact that there had been so many operations for glaucoma and yet we saw so few people who have been cured. There was a time when there was a man who was very successful in his operations for glaucoma, because in most of the cases where he did an iridectomy there was no glaucoma. He stated that he knew a patient who had been operated on by Graefe five times on both eyes in 1882 and 1883, and now had very nearly perfect sight. His vision is between 20/30 and 20/40.

He remembered a paper read by Dr. Bull before the American Ophthalmological Society, in which he reported eighty or ninety cases operated on, with practically no success. He was very pessimistic. Dr. Fiske believed in the operation but thought it must be done early. The living of the patient and attention to all those things that help so much in the treatment of any case, such as hygiene, proper food, etc., should be an important part of the treatment and should be carried out systematically and faithfully. He did not believe in waiting but thought one should operate right away.

Dr. George F. Suker was particularly interested in Dr. Fischer's theory of glaucoma. This in combination with Dr. Henderson's theory will, he thought, come as near explaining the production of glaucoma as any theory we have. As far as the treatment is concerned, one treatment is about as good as another. The results, as a whole, are about the same. It resolves itself into a question of etiology. Up to the present time he did not know of any solution of the question

more appropriate than that given by Dr. Fischer and the one by Henderson. The theory of acidosis appealed to him as the best. Colloids will swell in water. We could not produce an alkalinity, but we could produce a more or less acid condition. That was always brought about when there was occlusion, lack of filtration or absorption; and, as soon as there is a blockage or closure of the filtration angle, which the Henderson theory consists of, it gives rise to an acid condition because of the blockage. There is lack of absorption of water and increased tension.

The arteriosclerotic condition is perhaps the most common basic cause of glaucoma. There is frequently an arteriosclerosis in the peripheral arteries, and naturally the arteries of the eye would be similarly involved, just like the arteries in the kidney, which causes a swelling of the kidney. In the eye the pectinate ligament swells, crowding forward the lens, and obliterating the angle, so that one is bound to have stasis, exudation and transudation, and then acidosis, at least locally. The tension of the globe cannot be higher than the arterial pressure, as has been demonstrated by Henderson. He had seen these eyes that Dr. Fischer operated on and all his experiments have resulted the same. Experimentally, it is true, but practically, it is a different question, because we have to deal with several conditions. The circulation of the eye is somewhat different than can be represented in a test tube. Then there is a psychologic aspect—the psychologic trauma, which must be considered. The sequence is increased heart beat, increased blood-pressure, blockage of the pectinate angle, exudation, lack of absorption and acidosis.

As far as primary and secondary glaucoma are concerned, the underlying pathology is the same. The chronic condition is simply a slow process and the eye gradually accommodates itself to the increased pressure, the same as the brain to a slow growing tumor. As far as treatment is concerned, experience has shown that it is still in a very unsatisfactory state.

Dr. H. S. Gradle thought Dr. Fischer was on the right track. He had a little experience with glaucoma cases recently, which he had treated according to Dr. Fischer's theory, with almost perfect results. He would like to ask Dr. Fischer how he can explain the fact that we get a glaucoma practically only in hyperopic eyes, rarely in myopic eyes. He had not been able to answer that question with satisfaction to himself.

Dr. Thomas Faith said he would like to ask Dr. Fischer whether he believed that the increase in growth of the lens in a comparatively small eye or fibrosis of the pectinate or cribriform ligament were predisposing causes for glaucoma? He had had two experiences with the use of sodium citrate in glaucoma. One was a case of acute exacerbation in a chronic glaucoma, an inflammatory exacerbation. He did an iridectomy, but got no relief. At the end of two days the tension was higher than before the operation. On the third day the wound was closed, although the line of incision seemed to be prominent. The tension was distinctly plus 2. On the fourth day he began to inject 5 per cent. citrate of soda solution. There was no reaction for two hours, and the intern said that after five or six hours the tension was distinctly reduced. The following day the tension was still above normal. On the third day he gave another injection, but noticed no effect. The intern was positive that in the afternoon the tension was reduced and the following morning it was reduced. Two days later he gave another injection, and the tension fell to normal and remained at normal ever since. His conception of Dr. Fischer's theory is that the citrate of soda injection may be the means of temporarily reducing the tension; then if we look after the general conditions which predispose to this acidosis, we will probably succeed in effecting a cure. He had had a case of chronic non-inflammatory glaucoma which he has watched for a long time. This patient had an acute exacerbation after an attempt to take the tension of the eye with a tonometer. The conjunctiva was so chemotic that it seemed as though the patient had an acute attack. He succeeded in reducing the tension by hot applications and strong eserine solutions, two or three grains to the ounce, but later it went up again. This patient had a high urinary acidity, so he gave her large doses of bicarbonate of soda and ordered her to drink much water. The diet was modified and the tension fell to normal and has remained there

although he is still using the eserin. In 1905, a man, 61 years old, consulted Dr. Faith regarding a typical chronic glaucoma in one eye. Vision was reduced to perception of light in the temporal field. The lens was clear and the pupil fairly well dilated and immobile. He ordered eserin and watched him until May, 1907. The tension never was reduced to normal, but the eye was not painful. Then he went abroad; was gone six months, and when he returned the lens was completely opaque and tension was normal and has remained so. The eye is absolutely blind and the iris reacts only indirectly. There is not even light perception in that eye. He wondered if a swelling of the lens could account for the condition and if a lens could swell to the extent of producing such tension and yet remain clear. It was clear, so far as he could see, though he had not dilated the pupil to examine its periphery. Later the lens became completely opaque, and the high tension disappeared. The fellow eye remains normal as to tension, vision and fundus.

Dr. Richard J. Tivnen thought Dr. Fischer had done an immense amount of original work and he was glad to have heard his instructive paper. While his theory might not be the correct one, yet his work could not fail to be of value. He had used the sodium citrate therapy, which Dr. Fischer advocated, with varying results. Some patients reacted pretty well; others did not. All told, the treatment did not seem to fill the gap that he had hoped it would.

Dr. Fischer's theory is that glaucoma is produced by an edema, which is increased by acid conditions and lessened by an alkaline condition. His explanation and his demonstrations seem convincing but the clinical data, supplied by numerous observers, covering a wide variety of glaucomatous manifestations is still wanting. This clinical data, after all, is the final test.

The Henderson theory, in conjunction with Dr. Fischer's, seemed to him to be a more rational explanation of the etiology of glaucoma than any hitherto advanced.

Dr. Martin H. Fischer (closing): Henderson's theory of glaucoma is essentially a blood-pressure theory and is therefore open to all the objections that may be raised to such. Henderson's model is very pretty but he has not shown that it is identical with what we have in the body. No one has ever proved that an increased blood-pressure, provided it is not accompanied by defective oxygenation of the blood, leads to edema, or that obstruction in the lymph channels, or a number of lymph channels, or the thoracic duct, gives rise to edema. Pure blood-pressure increase never leads to edema provided it is produced with arterial blood. High blood-pressure prevents edema. It makes life possible in organs affected with arteriosclerosis, and when it falls, in the eye for example, it is a sure way of precipitating an attack of glaucoma or of producing an exacerbation in cases of kidney disease. Decrease of blood-pressure (except so far as hemorrhage is concerned) is more dangerous than an increase.

As to why we have glaucoma in hyperopic eyes, more than in others, he did not know but ventured the opinion that the associated eye-strain is a factor. Sclerosis of the cribriform plate, is, as he had said, a result—not the cause—of glaucoma. Iritis and subsequent scarring lead to a defective circulation in the eye, and thus tend to favor the maintenance of glaucoma. Priestley's theory that an increase in the size of the lens is responsible for a glaucoma, is, he thought, a case of looking on the effect for the cause. The increase in the size of the lens is an evidence of the swelling of the lens, as can be seen in any experiment on the eye. The acid accumulation in the eye, which makes the whole eye swell, also makes the lens increase in size.

The filtration hypothesis has been discussed in conjunction with edema anywhere in the body. In the eye, in glaucoma, it is simply a local problem. The question of filtration is a question in physical chemistry. We can not even filter water, let alone any colloid substance, through such colloidal membranes as we find in the body with anything like the pressures available here. The maximal values available in the body are 200 or, in extreme cases, less than 300 millimeters of mercury. But to accomplish filtration we need several atmospheres, in other words several times 560 millimeters. Where does the increased amount of albumin in the eye in glaucoma come from? It is analogous to the albuminuria of acute nephritis. We call it albuminuria when it comes from the kidney, and an increased

content of protein in the fluids of the eye in glaucoma. In both cases the proteins of the involved tissues go into solution in consequence of the increased acid content in the tissues. As to treatment, we agree in fundamentals. What is best done in a given case depends upon what we believe to be the underlying etiologic factors in the production of the acid accumulation and any remedy is good or bad as it helps or fails to remove these underlying etiologic factors. De Wecker and Stellwag said that the more acute the attack of glaucoma, the better the prognosis. Dr. Fischer had made exactly the same statement regarding nephritis and for the treatment of the nephritis had suggested the same thing as for the treatment of the glaucoma. Give alkalies, give salts; give water. The reasons are obvious. It is the same story as in glaucoma. Surgeons have decapsulated the kidneys to relieve a nephritis. That helps in many cases. On the other hand, we can help our nephritics quite as well by using alkali and salt. The old doctors gave salt by mouth and by the bowel, and in large doses. We give alkali in addition. Whether we relieve a case of glaucoma permanently or not depends on the underlying etiologic factors. If we have a syphilitic iritis with a secondary glaucoma, or an injury to the eye, the thing is to tide the man over the glaucomatous attack, and it makes no difference whether we stick a hole in the eye and reduce the tension, or give sodium citrate sub-conjunctivally or neutralize our acid effect in some other way. If we hold the tension down for two or three days, the etiologic factors responsible for the acid accumulation depart and that in an acute case, no matter whether it was iridectomized, or sclerotomized, or treated with sodium citrate, is synonymous with permanent relief of the glaucoma. On the other hand, if arteriosclerosis is the causal condition, we have a chronic case, and nothing in the way of treatment locally can as permanently relieve the condition. We must institute general treatment.

The prognosis is the same as in kidney lesions. An eclamptic woman who bears her child and whom we tide over the puerperium is a saved woman. The woman with a chronic interstitial nephritis secondary to arteriosclerosis and with a failing heart will produce enormous quantities of acid and we have to stay by her bedside all day to keep her sufficiently alkalinized and then we can only expect the most temporary relief, for a dying heart is not restored with alkalies and salts.

The use of sodium citrates in sub-conjunctival injections is not a cure for glaucoma. It never can be. If the tension can be kept down, so that we can save the eye temporarily and prevent another attack, the treatment has served its purpose. Sodium citrate simply reduces the tension. He had been interested to hear the reports of its use by others. He had not seen a single case where the tension did not come down. Sometimes druggists make a mistake in putting it up. They think the doctor has made a mistake in ordering so strong a solution. If sodium citrate solution is given, enough must be used. Gently distend the sub-conjunctival tissues. If the sodium citrate gets into the eye the tension has to come down. The only condition Dr. Fischer could conceive of where it will not come down is where there is an obstruction in the circulation of the eye of the gravest character or where the acid content is so high that the water gets into the eye out of the citrate solution before the salt itself. Another condition would be a systemic cause for the glaucoma, such as a heart or blood-vessel lesion of such a character that the generalized acidosis is so tremendous that local treatment is not enough. Then the case must be treated systemically, just as we would a case of acute nephritis. In fact the experience of the last few months had convinced him that it is as well, if not better, to treat all glaucomas systemically by using alkaline hypertonic salt solutions by rectum. In this way we raise the alkali-salt content of all the tissues of the body, including those of the eye, and so they all shrink and our glaucoma disappears even without the use of any local measures.

Dr. H. B. Young (closing): We are not so far apart after all. His own theory was a little fine spun, perhaps. The point he wished to make was that originally there must have been some nervous disturbance, such as we see with auto-intoxication amblyopias which affect primarily the circulation of the uvea. He had not enough opportunity to observe glaucoma and get extensive data. He

argued by analogy and the cases he had seen were relieved permanently. The only difficulty to his mind in the acceptance of the acidosis theory is the appearance of monocular glaucoma. He had also seen one case of glaucoma in a myopic eye, a man eighty years of age. He was going to put him on the alkaline treatment. He had very little pain or disturbance. The use of eserine or any myotic has been followed by an exacerbation of the condition.

Dr. Charles H. Beard (closing): All these measures have been attended by satisfactory results, but he was a great believer in simpler measures, simple incision into the anterior chamber for example, but always followed by pressure massage. He believed that this is a great factor in the treatment of chronic glaucoma. The operation starts the curative process, and gets the eye in a condition so that myotics and massage may be effective. He had had a case of juvenile glaucoma under observation for many years, in which he made several incisions at the base of the cornea through the same spot, and succeeded in reducing the tension, but it did not remain down. Lately the patient has been taught how to make the pressure massage, and she knows when she has reduced the tension. She also knows by the symptoms when to resort to the massage and can thus maintain a safe intra-ocular tension. Sclerotomy is a formidable operation, and there are apt to be iris complications, loss of vitreous and such things. That is why he prefers simple punctures of the anterior chamber, by long slanting incisions through the sclera into the iritic angle, followed by pressure massage. He considers that the best surgical treatment for chronic glaucoma.

RICHARD J. TIVNEN, Secretary.

Regular Meeting, Oct. 21, 1912

The President, Dr. Thomas Faith, presiding.

**A CASE THAT HAD RECOVERED FROM SYMPATHETIC INFLAMMATION
WITH NORMAL VISION**

Dr. W. A. Fisher stated that the case was presented to the society three years ago at a symposium on sympathetic inflammation with a vision at that time of 3/200.

The history of the case is as follows: Elmer B., aged 11 years, was struck in the right eye May 17, 1907, with a piece of copper. Dr. Fisher saw him July 17, 1907, two months after the accident. The right eye was hopelessly blind and there was a well marked sympathetic inflammation in the left eye. The right eye was removed within an hour from the first visit, patient was put in bed, given eliminatives and as his weight was about 70 pounds he was given 70 grains of salicylate of soda every 24 hours which gave him no annoyance. Two drops of 2 per cent. atropin was instilled into the left eye every 4 hours and hot applications applied.

The left eye was much better the next day after the removal of the right eye but there was no vision on account of the dense exudate in the pupil. The pupil would not dilate and an iridectomy was performed July 30, 1907, to reduce the tension. The tension was reduced by the iridectomy but did not entirely disappear. Aug. 30, 1907, one month after the iridectomy and two months after the removal of the right eye, the left lens was removed on account of the tension. Sept. 30, 1907, one month after the removal of the lens the eye was practically quiet and remained in a semi-quiet condition for several months. From May, 1908, until May, 1910, the eye remained quiet except the tension which was about minus one. His vision during this time was about 3/200. The pupil was drawn up and practically closed.

May 20, 1910, two years after the inflammatory symptoms had disappeared an iridotomy was performed by the Ziegler method with a very sharp Ziegler knife. A large pupil was made and has remained open as you see it to-night. He was kept in bed after the operation, eliminatives and large doses of salicylate of soda given, atropia 1 per cent. and dionin 10 per cent. instilled in the eye four times a day. His vision soon began to improve and as the vitreous began to clear up his improvement was rapid.

Aug. 20, 1910, three months after the iridotomy his vision had increased to 20/65 with correction. From this time on the improvement was slow but sure. Nov. 30, 1912, his vision was 20/40. To-night the eye is perfectly quiet, has not given him any trouble for more than a year. His vision is 20/20 and he can read Jaeger No. 1.

The excellent result obtained may be attributed at least in part to the iridotomy being performed two years after the inflammation had subsided.

DISCUSSION

Dr. W. F. Coleman has seen many disastrous results in the loss of the sympathizing eye. In 1887 he reported 28 cases of sympathetic ophthalmia. He had removed sixteen. In twelve cases he advised removal but it was refused. He took personally a very strong ground on this subject because in earlier experiences blindness resulted in the other eye in at least six cases because his advice to enucleate had not been taken.

The late Dr. Noyes hesitated to remove an eye lost from a perforating wound of the corneo-scleral region because in the laboring class it is a serious matter to renew an artificial eye frequently. Dr. Coleman advises removal of all eyes where the wound is so serious as to cause prospective loss of vision to the patient not only because of danger to the fellow eye but for cosmetic and economic reasons. The eye is so deformed that the employer will notice it as a blind eye. An artificial eye obviates this and for all unskilled labor the patient is capable.

If the fellow eye is inflamed, would you remove the injured eye? In three cases among his 28, in which he had removed the injured eye with the presence of sympathetic inflammation and serious visual loss in the other eye, the vision in the sympathizing eye has those three cases quadrupled. So that it was his experience that the removal of the injured eye is of decided advantage.

As to the etiology of sympathetic inflammation, it would be presumptuous to question the dictum of the bacteriologist. Adami and others maintain that inflammation may occur without infection, so that Dr. Coleman thought sympathetic inflammation might occur without infection. In the last ten years he had not seen two cases of sympathetic ophthalmia, probably because of the antiseptic treatment of the injured eye, but he thought it possible for the eye to sympathize without infection. A patient of his had an injury of his right eye forty years previously. He had 20/200 vision in the fellow eye, an optic neuritis was present and he concluded it was sympathetic. Dr. Coleman advised removal of the injured eye. Within a week the fellow eye had 20/20 vision. Is it probable that auto-infection occurred after forty years, and the occasion for infection had never occurred before? Is it possible that that was an infectious process, a migratory process?

So far as he knew the actual bacteria of sympathetic ophthalmia have not yet been discovered. Brown Pusey, E. V. L. Brown and others maintain that it is infectious. Others maintain that it may be due to reflex irritation. Years ago Hughlings-Jackson held that a nervous irritation maintained long enough produces a reflex inflammation. Dr. Coleman thought we go a little to extremes in the laboratory idea; that we are forgetting clinical experience.

Dr. O. Tydings had no idea until to-night of the result of the treatment in Dr. Fisher's case. The last time he saw the patient was after an iridotomy had been done and the eye was still red. He saw it quite frequently from the beginning of this trouble until within the last year, and if ever he looked at what seemed to be a hopeless case of sympathetic ophthalmia it was in this case.

This result should be an encouragement to all of us and Dr. Fisher is to be congratulated for obtaining such a result. It shows what skillful and careful work can do for an eye. It is a beautiful result because 20/20 vision is as much as any of us have.

Dr. Wm. H. Wilder: In connection with his case of sympathetic ophthalmia, Dr. Fisher spoke of the importance of withholding operation in such cases until the eye has remained quiet for a considerable length of time. This point, Dr. Wilder thought, should be positively emphasized.

The temptation is to attempt an iridectomy too soon after the subsidence of the inflammation, and when it is done, however neatly, we are surprised to find that the coloboma quickly fills up with exudate, and possibly the inflammatory process is again aroused in the deeper structures. He makes it a cardinal rule in such cases to wait two years, at least; after all signs of active inflammation have disappeared before attempting iridectomy or removal of the lens.

If the lens has remained clear, an iridectomy may suffice, but usually it is found necessary to remove the lens, and if so, he prefers to do the iridectomy and the extraction at the same time, so as not to subject the eye to the irritation of two separate operations.

Dr. Fisher is to be congratulated on the excellent result obtained in his case, which goes to show that the inflammatory process has expended itself on the anterior portion of the uveal tract, and that the vitreous chamber had remained comparatively free.

Dr. Oscar Dodd: When Dr. Fisher presented this case before the Society the first time, Dr. Dodd had also presented a case of sympathetic ophthalmia in which the outcome was not so successful. The failure in Dr. Dodd's case was due to the fact that each time he had the child under treatment the parents would take her home as soon as the inflammation had subsided, and each time she returned with the eyes in a much worse condition.

Early operation is certainly contraindicated. He remembered one case years ago in which Dr. Fisher advised him to operate. A boy, 10 years old, had the most severe case of sympathetic ophthalmia that he ever saw. There was a large exudate behind the iris which looked like an iris bombé. Dr. Fisher thought it advisable to remove a piece of iris, which he attempted to do, but found it so thoroughly bound down that it was impossible to cut out even a small piece without removing the lens and entire exudate.

It is always a question what to do in these cases because of the tension; in some, it is impossible to restore sight because of the disastrous results from secondary glaucoma. The case he mentioned terminated in this way so there was not even light perception after a time.

Dr. Sidney Stephenson reported several cases in which he had good results by doing a small needling which did not disturb the iris; simply stirring up a layer of the lens and irrigating the anterior chamber thoroughly. In that way he prevented reaction and had satisfactory results when it would have been impossible to remove the piece of iris without producing a severe reaction.

Dr. Fisher is certainly to be congratulated on his good result.

A CASE OF MONOCULAR OPTIC ATROPHY FOLLOWING AN INJECTION OF OLIVE OIL AND LANOLIN

Dr. W. A. Fisher stated that the case presented itself to the clinic at the Chicago Eye, Ear, Nose and Throat College with a well marked atrophy of the optic nerve of one eye with the following history: About ten weeks ago a doctor injected olive oil and lanolin under the skin of the forehead for the removal of a wrinkle or frown.

The injection was made at 10 a. m. and the patient stated she was unable to leave the doctor's office until 2 p. m. She vomited several times while in the doctor's office. About five days after the injection she noticed that she could not see, the blindness was complete and the eye has remained blind since that time. The injection was not hot, but of the temperature of the room. If an injection of this kind under the skin was a common cause of optic nerve atrophy, we would have many cases of atrophy of the optic nerve. No doubt many members of this society have injected olive oil, lanolin and paraffin with varied success, but Dr. Fisher had never heard of a case of atrophy of the optic nerve following such injections. If this was a cause it is very uncommon. It is possible that some of the injected fluid could pass into the orbital cavity and cause pressure to be made upon the optic nerve, because we know that we find an occasional specimen in some museums that shows the ethmoid cells to be separated by a very thin bone and we can conceive of the cells to be joined by a congenital opening or we can

imagine some inflammatory process has broken down some thin wall and joined them, but such specimens must be very rare. It does not seem probable that such would be the case but when we have optic neuritis we should always examine the ethmoid cells and sphenoid sinuses. We know that suppuration of the frontal sinus might pass to the ethmoid cells and sphenoid sinus and cause pressure of the optic nerve.

When injections are made around the eyes pressure should always be made at the inner canthus at the time of the injection and for some time after to prevent the injected fluid from entering the sinuses of the face. The condition of the eye is as follows: Vision of the right eye is 20/20, the field and fundus normal. The left eye presents a picture of atrophy of the optic nerve. The pupil of the left eye does not contract when a strong light is thrown into it, but does contract when a strong light is thrown into the right eye. The nerve is white, the edges are sharply cut and well defined and the arteries are contracted; other than this the ophthalmoscopic findings are negative.

Dr. Thomas Faith saw a statement the other day which he believes was made by Lawford and which was to the effect that the location of the injury to the nerve could be determined to some extent by the time at which the blindness and atrophy of the nerve occurred, viz., when the injury occurs in front of the point at which the artery enters the nerve the blindness will be immediate and the pallor of the nerve head will be at once noticeable. Where the injury occurs back of the point of entrance of the artery the fundus may retain its normal appearance for several weeks after the injury; the blindness sometimes coming on immediately and sometimes being delayed for a time, but always preceding the symptoms of atrophy.

Dr. Faith could readily understand how a particle of this injected material could have been forced beneath the periosteum and if considerable force was used could have dissected its way under this membrane into the orbit.

He had made quite a number of injections of paraffin under the periosteum of the nasal septum for the relief of ozena and had been very much surprised at the rapid way it will sometimes dissect its way along.

Dr. Jos. C. Beck: He was much interested in this case. It is very easy to understand that if one takes a long needle and passes it directly into the eye or next to the eye and injects a large quantity of paraffin that it will compress the optic nerve and make trouble. In over 300 injections in different individuals around the nose and where the eyes would be endangered, he had never had such a result, in fact, no difficulty with vision. So far as the literature is concerned, he can assure Dr. Fisher that there is no authentic case to prove that anything like that can result from paraffin injection around the eyes. He was quite certain that this result could not have been from the injection.

The condition of the nose was not given in detail. Simple inspection of the nose could not show the presence of a sphenoiditis. Nothing short of an operation on the sinus, removal of the middle turbinate and opening of the sphenoid sinus would prove that this was not such a case.

Dr. O. Tydings hoped that some anatomist will trace the trouble or probable course of that fluid so that it would produce the pressure that led to the optic atrophy. It must be exceedingly rare. Dr. Tydings did not recall ever having seen a case or a report of such a case. We inject all sorts of things around the eye, nose and forehead. He would like to know the probable course of the fluid, and whether there might not be another law in effect here, one we are prone to forget, and that is the law of coincidence. Sometimes we have optic atrophy that is not easily explained. If this is the result of injection, it must be exceedingly rare.

IMPLANTATION OF GLASS SPHERE INTO CAPSULE OF TENON

Dr. Geo. F. Suker presented a negro child aged 3 years, with a marked and excessive sclero-corneal staphyloma, preventing closure of lids. Enucleation difficult because of adhesions. Inserted a lead-free glass sphere into capsule of Tenon, covered same with deep conjunctiva and muscles, bringing same together with

catgut sutures while the overlying conjunctiva was brought over this by a continuous silk purse-string suture. Reaction moderate, but sufficient to preclude any great motion of stump. Yet, there is a full socket thus avoiding the sinking in of the prosthesis and the usual sinking in of the upper lid back of the shell.

There is no doubt but that the presence of the sphere in Tenon's capsule will materially aid the growth of the socket. It has been Dr. Suker's experience that some empty sockets in children do not attain the same size as the one having the globe, and since employing the implantations, this disparity in the size of the two sockets is not so marked.

DISCUSSION

Dr. W. F. Coleman did not have quite so good a result as Dr. Suker had in the implantation case. He had one case of sympathetic ophthalmia from the implantation of a glass ball in Tenon's capsule. He collected seventeen similar cases from the literature. Fox, of Philadelphia, is a great enthusiast in this work, and he reported three cases occurring in his own practice following the implantation of a gold ball which he prefers to the glass ball.

Dr. Coleman shall never again implant a globe of any kind. We can use the Snellen eye or we can inject stearin, from which he has never had any trouble nor had he seen any reports of trouble. It is possible that by using fat, as Dr. Suker has used it, we may not have any risk of sympathetic inflammation.

Dr. Wm. H. Wilder said when he observed the case of implantation of a glass ball in the capsule of Tenon, he could not help asking: "of what good is it?" There is not as much motion of the contents of the socket as there would have been if the ball had not been implanted.

When any foreign substance of an inorganic nature is implanted in the orbit, there is usually excited such an amount of irritation as to bind the muscles by adhesions and so to defeat the very purpose of such implantations, as in the present case.

If, when enucleating the eyeball, one is careful to keep the instrumentation within the capsule of Tenon, injuring the soft parts as little as possible, the wound in the socket heals promptly and the stump moves readily. He doubts that much motion will be transmitted to the prosthesis that may be used in this case.

Some operators have had good results from the use of fat, taken from the gluteal region and implanted into the capsule of Tenon, and he saw some cases of this kind in Elschuig's clinic that were encouraging.

But to his mind, the very slight improvement in cosmetic results obtained by implantation of balls of glass or any metallic substance are offset by the danger of irritation which is likely to be produced thereby.

Dr. Thomas Faith said he was not an advocate of the glass ball implantation, though he saw a case of Dr. Suker's a few years ago which was the finest result that he had ever seen. The case had been operated about three months before he saw it and the patient had not only good motion but had apparently good convergence with the operated eye. He thought that if the doctor persists in his attempts that he will eventually develop a method that will be both safe and satisfactory in all cases.

Dr. Geo. F. Suker (closing): Dr. Coleman cannot show a positive case of sympathetic ophthalmia due to the implantation of any sterile substance into the capsule of Tenon. It is impossible to get a sympathetic ophthalmia from any condition in a socket from which the globe has been removed. Dr. Suker looked up the literature carefully, and Dr. DeSchweinitz did the same and both were unable to find any record of such a case. If you remove an eye of a sympathizing character and implant, and sympathetic ophthalmia should occur thereafter, do not blame the implantation. The trouble was there before the eye was enucleated.

When he enucleated this eye there were terrific adhesions all around, and he had to tear them loose in order to enucleate the eye, but the result was a better cosmetic one. In this case we have not much movement of the stump because of the enormous adhesions. There is a nice sulcus not too deep so that there will

not be a falling in of the upper lid. It may not give much more motion than could be gotten from an ordinary simple enucleation, but it will always avoid the sinking in of the upper lid. That is the important point in this class of cases.

Dr. Suker did not believe in evisceration and implantation in the scleral capsule. This capsule implantation does not take any more time than a simple enucleation, and the reaction is not much greater, the time of healing not much longer and the result is better than we get in a simple enucleation.

It is very gratifying to have had the seeming adverse discussion of Dr. Wilder, but if he will do the implantation he will find that notwithstanding this case, his results will be more satisfactory than those of a simple enucleation.

NUCLEAR PARALYSIS OF MOTOR OCULI

Dr. Geo. F. Suker presented a patient, Mr. K., aged 50 years, German, good habits, family history negative as to syphilis and tuberculosis, married, family grown; a painter for the past 15 years; working in lead and water colors; has had lead colic and moderate drop wrist several years ago.

About six weeks ago he noticed the drooping of the left upper lid. Within 24 hours he was unable to raise it, which caused him to seek advice. Upon examination a complete paralysis of the third nerve of the left eye was found, fundus normal, vision 20/20; no action whatever to muscles supplied by third nerve. The ptosis was complete and lid very flaccid. In every other respect all findings were negative.

The paralysis was not progressive in so far as the fourth and sixth were not implicated. The probable etiology is lead poisoning.

Under ascending doses of K. I. and Hall's solution of strychnin, improvement took place, though slowly, the branches for inferior and superior recti showing the earliest and most improvement. The iris now reacts to light and accommodation though slowly. Recovery may and may not be complete. The ptosis seems to be the slowest in showing recovery.

CONGENITAL CATARACT

Dr. Geo. F. Suker presented a patient, Chas. H., aged 11 years. Bilateral congenital cataract. The lens of each eye was needled once. The capsule was extensively lacerated, and iced compresses were used for 24 hours after the discission. Atropin was used daily. As soon as the reaction of the needling had disappeared, which was within a week or ten days, and the lens became uniformly opaque a corneal section in the lower quadrant was made with a keratome and the lens delivered. A clean and complete delivery was accomplished in each eye, with scarcely any remains of the anterior capsule but an intact posterior capsule, vision in each eye 20/15 with plus 11 and minus Jaeger 1 with plus 14 and binocular fusion.

The short period of time in securing safe removal of the lens and largest share of anterior capsule is an advantage over several discissions. Both eyes were operated on at intervals of four weeks.

CONGENITAL ABSENCE OF GLOBE, SMALL SOCKET AND BLEPHAROPHIMOSIS ON LEFT SIDE WITH A COLOBOMA OF IRIS DOWNWARD IN RIGHT EYE

Dr. Geo. F. Suker presented the patient, Bertha B., aged 11 years; was born with the foregoing conditions. The vision in right eye is 20/20. No other congenital lesions in the eye excepting a coloboma of iris about 4 mm. wide, extending from pupillary margin to the root of iris; the remaining uvea was not involved.

Down deep in the small socket of the left side, a whitish area is seen, which does not look unlike sclera, yet no mass can be outlined which might be taken for a cryptophthalmos. Parent will not permit the removal in order to determine whether we are dealing with a case of anophthalmos or cryptophthalmos.

Plastic measures are being employed to enlarge lid fissure in order to wear, if possible, a prosthesis.

A CASE OF BILATERAL PTOSIS

Dr. Clifford E. Smith (by invitation) reported a case, L. F., male, aged 28 years. Has been under observation six months. Inherited drooping lids from father. First trouble with eyes began ten years ago and was diagnosed "granulated eyelids" by an eye specialist. Patient's chief complaint has always been a circular pain in and about the eyeballs. At the time trachoma was diagnosed patient experienced sensation of sand in the eyes, and lids became swollen and more droopy. Has visited specialists in Chicago, Milwaukee, San Francisco, etc., getting glasses from the different ones, but at no time has circular pain about eyes ever been relieved. Denies lues. At present patient complains of circular pain about eyes, and inability to read over ten or fifteen minutes at a time. Bright lights hurt the eyes. There are no subjective symptoms such as scratching, burning, smarting or itching.

Findings on examination: R. upper lid droops covering upper one-half of cornea and pupil. L. upper lid covers upper one-third of pupil. Upper lids are thickened and slightly reddened externally. Conjunctivae of all four lids and fornices chronically injected, too moist and vessels overfilled; smears and culture from the same are negative. No scars are visible on conjunctivae. Ocular conjunctivae seem very loosely attached to bulbs so that on slight pressure upward on the lower lids the conjunctivae roll up in front of lid borders. Tension normal in both eyes. Lachrymal sacs are negative regular to pressure and patent to Anaf's syringe. Pupils are equal, regular and react normally to light and accommodation. Anterior chambers are of normal depth. Discs slightly oval.

R. V. = 20/30; — 2.00 = + 1.75 Ax .90° = 20/20

L. V. = 20/30; — 2.00 = + 1.75 Ax .90° = 20/20

Present glasses were fitted under homatropin and patient wears them constantly. The eyes feel better with them on than off.

To sum up, we have a patient with a bi-lateral ptosis, mixed astigmatism, chronic catarrhal conjunctivitis, and loosely attached ocular conjunctivae. He wears the correction for his astigmatism and has doctored long and faithfully for the conjunctiva irritation. However, the circular pain in his eyes has not been relieved and he is unable to use his eyes for any length of time for close work. Would some operation for ptosis be justifiable and what are the prospects for relief from this or other measures?

Question: Is there a relation between the ptosis and circular pain about the eyes? (He wears the correction for his astigmatism.)

A CASE OF FOREIGN BODY (PROBABLY COPPER) IN GLOBE

Dr. W. H. Wilder presented the case of Walter R., aged 8 years; foreign body in chorioid of right eye. Was watching a bonfire when a sudden explosion threw a large amount of dirt into his face. Aug. 27, 1912, fragments of copper were removed from the forehead. There was a small wound in upper part of cornea of right eye just below limbus. Hemorrhage in anterior chamber. T. m. After absorption of blood, iris was seen to be adherent to the small wound in cornea. Lens and vitreous clear. R. V. = 6/20.

Track of foreign body can be seen in the upper temporal part of eye ground, and a mass, probably encapsulated metallic fragment, is seen one disc diameter from the upper temporal margin of the optic disc. Skiagraph shows f. b. in posterior part of the eyeball, but attempts to dislodge it with magnet have failed.

Present condition: Eye quiet. R. V. = 6/10, L. V. = 6/10.

GUMMATOUS SCLERITIS—EPISCLERITIS—IRITIS

Dr. W. H. Wilder presented case, Miss C. T., aged 21 years, who for the last two years had attacks of inflammation of left eye lasting from one to several weeks.

First seen March 1, 1912, when a large, yellowish hemispherical nodule about 5 mm. in diameter was seen on the nasal side of left eyeball 6 or 8 mm. from the limbus. It was rather firm and slightly attached to the sclera. This began as a

pinhead sized nodule two months previously. On upper part of eyeball an episcleritic node was present. Pupil irregular from post. synechia.

Tuberculin test (von Pirquet) was positive.

Inoculation of eyes of two rabbits with small particle removed from the growth was negative.

Wassermann test distinctly positive.

R. V. 6/6. L. V. 1/60. Under treatment with mercury inunction and K. I. the growth completely disappeared.

Present condition: R. V. 6/6. L. V. F. 1 ft.

Fundus invisible.

CASE OF INVERSION OF IRIS AND PARTIAL DISLOCATION OF THE LENS

Dr. Charles G. Darling presented the case of Mrs. C., aged 52 years, who came to the clinic on account of an ulcer of the cornea.

Examination of the left eye showed corneal ulcer near margin, inversion of iris and partial dislocation of lens. Patient said that 45 years ago she had a blow on her left eye and the pupil had been large and she had not seen well with eye since then.

One would expect to find the lens opaque after being partly dislocated for so many years.

The fundus can be plainly seen; there is a rupture of the chorioid and a circumpapillary atrophy of chorioid. Tension is normal. L. V. = hand movements.

CASE OF PROBABLE TUBERCULAR SCLERITIS

Dr. Charles G. Darling presented case of Mrs. C. C., whose history is negative, with exception that she has nursed husband past two years, who is at home on account of pulmonary tuberculosis.

First seen September 18. She stated eye had been inflamed for a number of weeks. Examination showed a marked scleritis of left eye, with involvement of ciliary body, iris and cornea. An injection of 1/1000 mg. of T. B. was followed by a local reaction 24 hours later; all the following injections, about a dozen in number, given at intervals of four or five days, were followed by a local reaction. The case has improved under treatment of injections of T. B. and local use of atropin, dionin and hot applications.

As the patient had a local reaction in left eye following every injection of T. B., Dr. Darling believed the case to be one of local T. B.

PENETRATING INJURY OF GLOBE BY FRAGMENT OF COPPER, FOLLOWED BY LOSS OF EYE

Dr. Charles G. Darling reported case of a young man aged 14 years, hit in right eye while passing some boys throwing stones at blank cartridges. On examination three days later he found a cut in cornea, the fundus could not be seen on account of a traumatic cataract. X-ray picture taken by Dr. Potter located foreign body at posterior pole of eye partly sticking through sclera. After cutting external rectus and rotating eye as far in as possible, foreign body could not be felt or seen at posterior pole of eye. Eye was removed and foreign body found to be of copper and in posterior pole of eye.

A CASE OF PERSISTENT PUPILLARY MEMBRANE

Dr. Rochester (for Dr. Casey A. Wood), reported a patient, aged 29 years, who had never been aware of the abnormal condition of his eye. He presented himself for treatment because of symptoms brought on entirely by his high degree of hypermetropia. No history of iritis or any other inflammatory disease of the eyes.

Examination disclosed a small band of tissue running from the anterior surface of the iris looping well forward into the anterior chamber and attaching itself to the lens capsule. As is usual in these persistent membranes the point of attach-

ment on the iris is well back from the pupillary edge at the region where the embryonic vessels for nourishing the pupillary membrane formerly arose. At the point on the anterior capsule, where the final attachment is made, is seen a small white deposit, probably a remnant of the fetal vascular capsule of the lens.

These persistent pupillary membranes are usually of little significance to the patient for they seldom, if ever, give any trouble and very slightly interfere with vision. With the proper correction, this patient's vision is practically normal.

AN INTERESTING CASE OF PRIMARY GLAUCOMA

Dr. Thomas Faith presented case of Mrs. J. H., aged 29 years, of Swedish parentage, and apparently in good general health. Was first seen on September 30, with the following history: For many years she has noticed that her eyes have appeared tired looking particularly at night and after loss of sleep, and she has had occasional attacks of photophobia, but the vision has always been good until the present trouble developed.

In January of the present year while doing a family washing she was taken with a severe headache which lasted all day and towards evening both eyes began to pain severely; and in a short time became very red and swollen. A physician was called who diagnosed the condition as an attack of pink eye. He prescribed hot borie compresses and some internal treatment but was obliged to administer morphia before the pain was relieved. Patient remained in bed constantly for four weeks during which time both eyes remained red, the right worse than the left, and during which time she had attacks of blindness affecting first one eye and then the other and for one day, the patient states, she seemed completely blind in both eyes. During the next four or five weeks she remained in the house and was seen by two different physicians—the treatment of the eyes seemed to be always the same. Finally the left eye began to clear up and the right eye remained red for about three months. At this time she was taken to a local optician who prescribed glasses, which were changed five or six times; nothing in the way of local treatment was given until about September 1, when the patient came under the care of Dr. Abernathy Graves of this city. Dr. Graves immediately made a diagnosis of glaucoma and began treatment with myotics. At this time eserine in most any strength caused so much discomfort that Dr. Graves referred the case to Dr. Faith for further treatment.

When first examined September 30, Dr. Faith found R. V. light perception only; L. V. 20/50. Right pupil widely dilated and inactive T. R. E. with palpation plus two, with the Schiotz tonometer 70 mm. Hg. marked glaucomatous excavation of optic nerve, slight beginning lens opacity, the anterior scleral veins were distended and tortuous, though the sclera seemed unusually white. Could not take the field. The left eye showed the pupil dilated more in the vertical than in the horizontal meridian and reaction sluggish, anterior scleral vessels gorged, anterior chamber shallow, T with palpation plus one, with the Schiotz tonometer 42 mm. Hg. Distinct cupping of the nerve head of glaucomatous character. Complete urinalysis was made and shows deficient quantity, about 40 oz. per 24 hours. Sp. Gr. 1.015; urea 1.1 per cent.; total solids 3.4 per cent.; acidity 27 degrees; a trace of albumin; a trace of bile; no indican; hyalin casts; a few red blood-cells and a few pus cells. The patient's blood-pressure at this time was 110 to 120. Her digestion was apparently normal, and menstruation was normal but scant.

A solution of eserine sulphate, 2 grains to the ounce, was ordered but could not be used on account of pain which it produced; it was then reduced to 1 grain to the ounce, which also caused pain and had to be further reduced to one-half grain to the ounce. This weak solution could be tolerated all right though slightly painful, but seemed to have no effect whatever on the pupil or the tension, particularly in the right eye. The visual field taken at this time showed practically the same features as the one taken when the eserine was first ordered. Also the tonometer reading a. e. 40 to 42 mm. Hg. in the left eye and 68-70 mm. Hg. in the right. On October 10 he injected 15 m. of a 5 per cent. solution of sodium citrate under the conjunctiva of the left eye and on the 11th, the same amount was

injected in the right. The immediate effect of these injections was a lowering of the tension in both eyes. The right tension being lowered to about 52 mm. and the left to 25-27 mm. These injections, however, were so painful that the patient begged me to discontinue them, which was done. Then he returned to the eserine solution, and since that time has used the 1 grain to the ounce solution without any discomfort whatever. The pupils are both much smaller now, that of the left eye being almost normal and the patient expresses herself as feeling much more comfortable than at any previous time since the trouble began. The vision right eye is now, October 19, hand movements at 10 ft., October 21, —20/200, and the tension October 19, R. T. = 60 and L. T. = 27, and at last reading was 37 mm. The vision L. E. is 20/30 and the tension at last reading was 20-22 mm. Dr. Faith had promoted elimination constantly by the use of sodii phosphate and lithium citrate. What further treatment should he adopt, if any, and should he operate?

There are several interesting features in connection with this case. First the age, according to Knapp's tabulation, he found in 352 cases the following results as to age: From 10 to 20 years, 3 cases; from 20 to 30 years, 11 cases; from 30 to 40 years, 28 cases; from 40 to 50 years, 60 cases; from 50 to 60 years, 130 cases; from 60 to 70 years, 89 cases; from 70 to 80 years, 28 cases; from 80 to 90 years, 3 cases.

This patient then is young to have glaucoma and according to Knapp's table comes within the age group which comprises $3\frac{1}{8}$ per cent. of the entire number of cases.

Then of considerable interest is the kidney findings which show that we have here either a renal insufficiency, a slight nephritis, or a renal edema, and which bears out the ideas of a number of observers who, as A. Terson puts it, believe that glaucoma is a localization of other processes in the organism, that it is nothing more than an edema in a closed cavity. That the hypertension is only a symptom and not the disease itself. Terson gives various predisposing factors such as heredity, female sex, Jewish race, gout, nervous affections, cardiac and circulatory disturbances, chronic intoxications and various other causes among which he gives particular prominence to high blood-pressure, arteriosclerosis and symptoms of renal impermeability. He further says that as a consequence of renal insufficiency there will be a retention of chlorids in glaucoma and that therefore a dechloridation treatment is indicated. He thinks that acute attacks of glaucoma may be due to sudden raising and lowering of blood-pressure, but that this is by no means always the case and that the blood-pressure is more likely to be constantly high than otherwise.

DISCUSSION

Dr. William A. Fisher: Dr. Faith's inquiry whether he should continue with the eserine or whether he should give more citrate of soda seemed to Dr. Fisher an easy problem. Dr. Faith had said that the citrate of soda had put the patient in a condition where the eserine gave him good results and the eserine did not give the good results before the citrate of soda was injected. The only reason he discontinued the citrate of soda was on account of the pain following the injection. In painful cases, as this one, Dr. Fisher did not see any harm in injecting a weak solution of cocaine under the conjunctiva before injecting the citrate of soda and he suggested that more cocaine be used before injecting the citrate of soda and then continue the eserine if necessary.

Dr. O. Tydings had used citrate of soda at first with good result in a case of traumatic glaucoma and he thought he was getting good results. The first thing he knew he had an increase of tension, and he has been a little more careful with it since. He had a case of glaucoma in a patient younger than Dr. Faith's patient, who went to the infirmary. She reported that she had been blind for two years following the fitting of a pair of spectacles in the infirmary. The patient was 24 years old and had been blind in the right eye for two years from glaucoma; the left eye was beginning to be affected. It was difficult to control conditions, and for the woman's own safety he advised her to go to the Michael Reese Hospital. He has had no record of her since, although he has asked Dr.

Mortimer Frank to look up the case for him. The urine was examined but he did not recall the report now. He was unable to determine the cause of the glaucoma.

PENETRATING WOUND OF SCLERA-CORNEA REPAIRED WITH CONJUNCTIVAL FLAP

Dr. Richard J. Tivnen presented a case of a man, aged 24 years, who one month previously had received a penetrating injury from a piece of steel at the sclera-corneal junction at about the location of six o'clock. When patient was seen four days later, examination disclosed an incised wound of sclero-cornea with an incarcerated iris and a minute opening at the lower angle of the wound through which the vitreous constantly oozed. Radiograph and electric magnet, negative. History also clearly indicated that the foreign body was not retained in the globe. The wound was repaired by dissecting a conjunctival flap around the entire circumference of the cornea and drawing this over the wound and securing same with a purse-string suture. The patient was exhibited as an illustration of the satisfactory results one may obtain in utilizing a conjunctival flap as a splint and protection against infection in this class of injuries.

CASE OF PENETRATING WOUND OF CORNEA FOLLOWED BY TRAUMATIC CATARACT

Dr. Richard J. Tivnen presented a case, L. J., who about two months previously, while at work, was struck in the right eye by a piece of steel. Examination of right eye, 24 hours later, disclosed incised wound of sclera-corneal junction, nasal horizontal meridian, 5 mm. in extent. The iris was incarcerated in the wound. The lens was cataractous and some of the swollen lens material was present in the anterior chamber. While the history pointed to the absence of a retained foreign body a radiograph was taken and the electric magnet applied; both with negative result. Perception and projection, excellent, tension, normal. The case was presented to gain an expression from the members as to their practice in dealing with a cataract of this type. Dr. Tivnen, in the present case, while recognizing that the swollen lens material might, by traction or pressure, inaugurate a keratitis, an iritis or a glaucoma, had refrained from operative interference owing to the fact that the patient was constantly under his observation and that the eye presented no evidence of irritation or increased tension. In his judgment, as long as the progress of the eye is favorable and uncomplicated he felt justified in continuing his present conservative plan of management.

DISCUSSION

Dr. C. F. Burkhardt had had a case similar to Dr. Tivnen's but there was no penetrating wound. His patient was a boy nine or ten years old. The cause of the injury to the lens was a shot from an air gun which struck the cornea with sufficient force to rupture the lens capsule and dislocate the lens into the anterior chamber. He treated the patient conservatively and the lens was entirely absorbed. The boy now has something like 6/20 vision with correction. Only a tiny shred remains, probably of the capsule.

RICHARD J. TIVNEN, Secretary.

EFFINGHAM COUNTY

The regular monthly meeting of the Effingham County Medical Society was held at the City Hall at 1:30 p. m., Jan. 14, 1913, with Dr. Taphorn in the chair. Minutes of the last meeting were read and approved. Reading of correspondence from Mr. Mayen regarding Medico-Legal fund. A motion that a committee of five be appointed to investigate communication and report at the March meeting was made by Dr. Haumesser and seconded by Dr. Wettstein. Discussed by Drs. Hoffman, Bing, Haumesser, Damron, Buckmaster. Committee appointed by the president was Drs. Haumesser, Brooks, Damron, Wettstein and Bing. The president appointed the following committees:

Program and Science—Drs. H. Taphorn, Effingham; E. A. Bing, Altamont, and L. C. Bassett, Effingham.

Public Press—Drs. F. Buckmaster and E. L. Damron, Effingham, and J. G. Allan, Edgewood.

Legislation—Drs. Geo. Haumesser, Shumway; T. J. Dnnn, Dietrich, and E. W. Brooks, Beecher City.

Library and Post-Graduate Study—Drs. F. W. Goodell, Effingham; Weisenbron, Teutopolis, and J. C. R. Wettstein, Effingham.

Public Health and Hygiene—Drs. S. C. Lorton, Shumway, S. F. Henry, Effingham, and W. P. Tinsley, Beecher City.

Medical Economics—Drs. F. N. A. Hoffman, Effingham; J. B. Holson, Farina, and I. B. Tope, Montrose.

Banquet and Entertainments—Drs. J. H. Walker, C. F. Burkhardt, and C. C. Holman, Effingham.

Medico-Legal—Dr. E. W. Brooks, Beecher City.

Membership—Drs. Haumesser, Kershner, Brooks.

Dr. E. L. Damron gave a talk on "Politics and Legislative Needs," recommending a coming together of societies and doctors and the formation of a legislative association in the state, also the support of organizations already formed. Paper by Dr. Haumesser on "Wills."

At this point the speaker of the day, Dr. J. B. Murphy, of Chicago, arrived and was introduced by Dr. C. F. Burkhardt. Dr. Murphy held the doctors spell-bound by his most able and instructive presentation of the "Treatment of Acute Bone Infections in Relation to the General Practitioner."

Dr. Murphy had with him an abundance of x-ray photos showing conditions and results he has attained which could not help but convince the most skeptical.

This without exception was the largest and most helpful meeting Effingham has been favored with. There were some 34 members and visitors present. Among the out of town doctors and friends present were: Dr. J. R. Scott and wife of Edgewood, Dr. Tope of Montrose, Drs. W. E. Franke, W. A. Robb, Yelton, Schmidt of Newton; Drs. F. M. Phifer and H. E. Wilson of Centralia, Drs. Andy Hall and L. C. Morgan of Mt. Vernon, Dr. J. Y. McCullough, Dr. W. H. Staltz, Rev. Beboat and Mr. Thompson of Casey; Supt. of Poor, J. W. Davis, and our dentist friends Drs. Bellechambers, Cunningham and Hill of Effingham; Paul Eiche our druggist, and Geo. M. LeCrone of the *Morning Record*. The regular members present were Drs. Damron, Haumesser, Buckmaster, Wettstein, Holman, Hoffman, Lorton, Bassett, Bing, Taphorn, F. W. Goodell, Burkhardt and Henry.

In the evening Dr. Murphy gave an address at St. Anthony's Hall to an audience of about 500 interested people. There was much enthusiasm shown and this address bids fair to have a lasting effect on the community for better health.

DR. BASSETT Secretary.

JACKSON COUNTY

The Jackson County Medical Society held its monthly meeting December 27, 1912, in the Jackson Club Rooms, Murphysboro. The following new members were added to the roll: Drs. Busse, of Campbell Hill; Stearns of Pomona; Chamness, of Elkhville, and Hrabik and Minner, of Murphysboro.

The following officers were elected to serve during the ensuing year: president, Dr. House, De Soto; vice-president, Dr. Barrow, Carbondale; secretary-treasurer, Dr. Hrabik, Murphysboro; delegate, Dr. Grizzell, Murphysboro; alternate, Dr. Mitchell, Carbondale.

LAKE COUNTY

A very interesting meeting of the Lake County Medical Society was held Jan. 9, 1913, at the Public Library, Waukegan. The society was highly honored and pleased by the presence of Dr. Frank Billings of Chicago, a man of national if not international fame, professor of the practice of medicine at Rush,

a member of the Illinois Board of Charities, and ex-president of the American Medical Association. After a short business session in which seven members were elected, making a total membership of fifty, and appointment of important committees, Dr. Billings gave an informal talk for half an hour relating the result of several years of original clinical research work and the successful treatment with autogenous vaccines of many difficult and obscure cases in which the usual methods of treatment had failed. He then read a paper for another half hour, describing the remarkable success attending the use of a new remedy, benzol, in a number of cases of leukemia, after the usual methods of treatment by the x-ray and other means had given only partial success. This was simply the preliminary report of cases which he will give fully later to the profession.

Dr. Foley made a few remarks concerning the International Congress of Demography and Hygiene at Washington which he attended last fall.

Dr. Bouton read a paper on "Preventive Medicine," telling about the causes and methods used to prevent the spread of typhoid fever, diphtheria, scarlet fever, pneumonia and tuberculosis. The article, which covers the most important contagious diseases of foreign lands as well as our own, will be published in the ILLINOIS MEDICAL JOURNAL, probably in March.

The members then went to the Hotel Washburn where an excellent supper was served and then the following responses to toasts were given with Dr. Roberts of Highland Park, president of the society, as toastmaster: "The Doctor and the Minister," Rev. J. B. Richardson; "The Doctor and the Lawyer," Commissioner Diver; "The Doctor and the Teacher," Superintendent Thompson; "The Doctor and the Public," Dr. Bergen of Highland Park, introduced as the "silver-tongued orator of the north shore," certainly a well merited title. Thirty-three physicians attended the supper; twenty-three from Waukegan and North Chicago and two from Wauconda. The next meeting will be held early in April at Highland Park

MARION COUNTY

Marion County Medical Society held its regular meeting in the City Hall at Centralia, Illinois, Friday, Dec. 27, 1912, with Dr. Geo. S. Rainey in the chair. The following members were present: Drs. H. L. Logan, W. W. Murfin, S. E. Peden, J. M. Haney, H. D. Gillette, W. D. Richardson, J. W. Armstrong, J. C. Hall, W. D. Murfin, H. W. Brann, H. E. Wilson, W. A. Stoker, T. J. Foster, O. D. Deihl and F. M. Phifer.

The minutes of the previous meeting were read and approved. Report of treasurer read and approved.

The applications of Drs. J. W. Gambill and S. A. Smith were presented and both were unanimously elected to membership. The following officers were elected for the ensuing year: president, Dr. W. W. Murfin, Patoka; vice-president, Dr. Geo. S. Rainey, Salem; secretary-treasurer, Dr. F. M. Phifer, Centralia.

Dr. C. N. Dunn presented a paper on "Fresh Air and Sunshine." Dr. F. M. Phifer presented a paper on "The Advancement of Surgery." Both of these papers were discussed freely by several of the members.

On motion the meeting adjourned to meet in Centralia Feb. 28, 1913.

MASON COUNTY.

The regular meeting of the Mason County Medical Society was held Jan. 6, 1913, at Mason City Hall. The president being absent Dr. Burnham was elected to the chair. Minutes of previous meeting were read and approved.

Dr. Minnick of Mason City read a paper on "Anascara, with Special Reference to Heart Lesions." The doctor handled the paper well, giving in detail etiology, symptomatology, pathology and dwelling on the various modes of treatment. The paper was then discussed at length. Dr. Caton of Mason City was on the program for a paper, but was detained on account of sickness.

A program committee was appointed for the year by the president as follows: Drs. H. O. Rogiers, Mason City; M. A. Weight, Manito; E. W. Paul, Forest City; F. F. Garrison, Havana, and W. R. Grant, Easton, Ill.

The following new members were elected to our society: Drs. M. E. Langston, Bath; Wm. H. Schuette, Mason City, and Dr. Hanson, Easton, Ill.

Officers elected for the year 1913 are as follows: president, F. F. Garrison, Havana; vice-president, L. F. Burnham, Mason City; secretary-treasurer, W. R. Grant, Easton.

Those present at the meeting were Drs. Garrison, Rogier, Cargill, Schuette, Hanson, Walker, Burnham, Minnick and Grant.

M'DONOUGH COUNTY

The first quarterly meeting of this society was held Jan. 7, 1913, at Macomb, with a majority of the physicians of the city in attendance, and some from Bushnell, Bardolph and Prairie City. Other members throughout the county were unable to attend on account of the inclemency of the weather.

One of the principal topics of the evening under discussion was given by Dr. S. S. Allen of Macomb, who took for his subject, "Middle Ear Deafness." Dr. Allen discussed the cause and stated that the majority of cases of deafness could have been cured had they received the proper treatment and if tended to when the person was young; if the adenoids, tonsils and other nose and throat troubles were looked after in time.

Dr. Nickerson of Quincy, president of the State Medical Society, in his paper on "Pneumonia," laid special stress on the fact that in order to save the greatest number of pneumonia victims one must keep the general health up to its highest standard. Dr. Nickerson's presence at the meeting was highly appreciated by the members of the society and he proved himself a man well worthy to fill the high position to which he has been elevated.

At the close of the meeting the members enjoyed a lunch at the Grand Café. The next meeting will be held in April, at Bushnell.

MORGAN COUNTY

The postponed annual dinner and January meeting was held January 16, at "Maplecrest," the new property which is to be used by Dr. Elmer L. Crouch in connection with Maplewood Sanatorium. Dr. and Mrs. Crouch as usual proved their ability as delightful host and hostess.

After the dinner Dr. F. A. Norris, the new president, introduced Dr. Malcolm A. Bliss of St. Louis, who presented a subject upon which he and Dr. Greenfield Sluder have been working for some time, namely, "The Relations of the Fifth Cranial Nerve to the Bony Sinuses of the Skull."

From the examination of a number of heads, postmortem anomalies of the various sinuses have been found and resulting anomalies of position of the fifth nerve and its relations to the sinuses have been demonstrated. In some cases all three branches of the fifth nerve have been found to be in close relation to diseased sinuses.

Dr. Bliss and Dr. Sluder think that many cases of ties and dull headaches which are unexplainable are probably due to the close proximity of the fifth or other nerves to abnormally extending sinuses that harbor infection. The cavernous sinus perhaps suffers most in its frequency of being abnormal. At times the sphenoidal may much encroach upon its outer wall. Some pain complexes may be explained in congenital malformations plus postethmoidal sphenoidal sinus disease.

All pain complexes are not to be explained by this relationship of nerve to sinus. On the other hand examination of the ganglion and of the root have not succeeded in clearing up all of the cases.

Removal of the ganglion is a formidable procedure, while alcohol injection promises just so much and when the pain returns can be repeated.

Dr. Bliss and Dr. Sluder are making many observations on living as well as dead subjects and are striving along with others to get at the bottom of the matter, to reduce the unexplainable cases to the minimum.

The subject was well received as evidenced by the free questionings and discussion which followed.

The members present were: Drs. Adams, Baker, Black, Bradley, G. R., Bowe, Cole, Crouch, Day, J. U., Dewey, Duncan, Foley, Gailey, Gregory, Hairgrove, Hardesty, Haskell, Milligan, McLaughlin, Norris, Ogram, Pitner, Reid, Stacy, Thompson, Wakely and Woltman.

Guests of the society were Drs. M. A. Bliss of St. Louis; W. H. C. Smith of Godfrey; C. U. Collins, Robert Hanna, Peoria; W. S. Taylor, J. A. Glenn, Ashland; C. R. Thomas, Roodhouse.

The clinical and laboratory diagnosis of tuberculosis will be presented at the February meeting on the 13th, by Drs. Charles E. Cole and Grace Dewey.

GEORGE H. STACY, M.D., Secretary.

PEORIA COUNTY

The election of officers, annual committee report and an address by Dr. W. B. Short, retiring president, featured the meeting of the Peoria Medical Society, at the Association of Commerce rooms, Tuesday, Dec. 17, 1912.

An interesting number on the program was the demonstration of the pulmotor, an instrument for use in cases of drowning, gas asphyxiation, or stopping of the respiration from any cause.

The following were elected as officers for the coming year: president, B. M. Hayes; first vice-president, Sumner M. Miller; second vice-president, C. D. Thomas; secretary-treasurer, E. W. Oliver (reelected); board of censors, Edward Hasson, R. E. Kerr, and C. B. Welton; delegate, C. H. Brobst.

PERRY COUNTY.

The Perry County medical Society held a meeting Jan. 13, 1913, and elected the following officers for the coming year: president, Dr. Max Adles, Duquoin; first vice-president, Dr. J. S. Templeton, Pinckneyville; second vice-president, Dr. J. S. Cleland, Swanwick; third vice-president, Dr. H. W. Wolf, Tamaroa; fourth vice-president, Dr. James T. Leight, Duquoin; secretary-treasurer, Dr. Rolla D. Pope, Duquoin.

SANGAMON COUNTY

The regular monthly meeting of the Sangamon County Medical Society was held Jan. 13, 1913, at the Lincoln Library, the officers were elected for the ensuing year and are as follows: president, D. M. Ottis; vice-president, Chas. D. Wright; secretary-treasurer, H. C. Blankmeyer.

STEPHENSON COUNTY

The Stephenson County Medical Society held its annual meeting at the court house Thursday. The attendance was very large and the interest manifest was encouraging to those who had planned the meeting. A number of doctors from towns in this and surrounding counties were in the city for the meeting.

Officers for the ensuing year were elected as follows: president, Dr. Chas. L. Best; vice-president, Dr. J. A. Poling; secretary, Dr. J. Sheldon Clark; treasurer, Dr. Nelson C. Philips; censor, Dr. Guthbert J. Leavy; delegate to the state meeting at Peoria, Dr. K. F. Snyder; alternate, Dr. J. A. Poling.

Mr. Theodore W. Singer, who has been in Stephenson county for several days, acquainting himself with the local medical situation, was present at the meeting and gave a very interesting talk to the members. Mr. Singer represents the

American Medical Association and is surcharged with enthusiasm and the possibilities of the work that he is called upon to do.

Among those present were the following: Drs. Arnold, Best, E. H. Best, Chas. L. Best, Burns, Clark, Hutchins, Linda K. Karcher, Mease, Poling, Peck, Rideout, Saucerman, J. W. Stealy, R. J. Smith, Snyder, Thompson, Phillips, Harlan, Hewetson, Wilson, A. A. Leavy, Collins, Pettipiece, Diestlemeier, Stiver and the following visitors: Dr. G. M. Tyrrell, of Scales Mound, Dr. O. F. May of Shannon. Several of the graduate nurses of the city were in attendance.

The program was given as follows:

"The Physiological Effects of *Cecale Cornutum*," Dr. A. E. Smith.

"Treatment of Pneumonia," Dr. Chas. L. Best.

"Vaccine Therapy," Dr. J. H. Stealy and Dr. N. R. Harlan. (Illustrated by the stereopticon.)

The paper on vaccine therapy, by Drs. J. H. Stealy and N. R. Harlan, was of a very high order. This paper could well bear another hearing, for the work put forth in its preparation was considerable and the deductions of the essayists were logical. There is no doubt, as shown by the paper, but that in many acute diseases we are prone to use this or that vaccine with little regard as to the sort of receptors that are awaiting them.

Dr. A. E. Smith's paper on the "Deleterious Effects of Ergot on the Unborn Child," was well received. The doctor reported a series of cases that he had observed for a period of years, of offspring of mothers who had attempted to produce an abortion sometime during the gestatory period by taking large doses of ergot. These children observed by Dr. Smith were without exception much below normal, having all manner and kind of stigmata.

Dr. Charles L. Best's paper on the "Treatment of Pneumonia," deals especially with the use of massive doses of quinin and urea-hydrochlorid, as recommended by Dr. Solis-Cohen.

This paper brought out a great deal of discussion, both of the use of the quinin and other points of general interest in the treatment of pneumonia.

Dr. D. C. L. Mease in discussion spoke of the rise and fall of many lines of treatment advocated during his experience covering a period of thirty years. It was the doctor's opinion that so far, we had no definite line of treatment for pneumonia as such, but that every case is a problem of itself.

Clinical Cases. Report of the successful passage (via naturales), of a silver half dollar that had been swallowed by a ten-year-old lad, with x-ray pictures showing the coin at various points in the esophagus, Dr. J. Sheldon Clark

Case of Unilateral Congenital Cataract, Dr. E. H. Best.

The use of the stereopticon in making clear certain points in the paper on vaccine therapy made a good impression with the hearers. The society is not for a moment considering the advisability of competing with the "movies," but this method of exemplification of medical topics is very commendable.

WILL COUNTY

Twenty-nine members of the Will County Medical Society sat down to dinner at the Commercial Club, December 17, at Joliet. After dinner the election of officers took place, which resulted as follows: president, A. J. Lennon; vice-president, G. M. Pears; secretary-treasurer, Marion K. Bowles; members of the Board of censors, Alfred Houston and V. J. Cohenour; delegate to the state convention, V. H. Curtis, Wilmington; alternate, William K. Bowles; member of medicolegal committee, Wm. Dougall; member auxiliary league, American Medical Association, Dr. William Richards.

Addresses were given by Dr. M. L. Harris, Chicago, who gave a stereopticon lecture on the "Treatment of Fractures," and Dr. E. P. Ryerson, Chicago, spoke on the "Affections of the Sacro-Iliac Joints." A general discussion was also held.

The society elected to membership ten physicians: Drs. E. J. Abell, Alfred Houston, Grant Houston and Schreffler of Joliet; W. B. Welch, Marshall Cassingham of Wilmington; Hedges, Frankfort, Turner, Holke and Howe of Peotone.

NEWS OF THE STATE

NEWS ITEMS

—The Drs. Weber, of Olney, recently completed the addition to their sanitarium at a cost of \$20,000.

—Dr. Edwin Pynchon has sent in to the Bennett Medical College his resignation as Professor of Rhinology and Laryngology.

—The Chiropractors of Indiana, forty in number, have perfected an organization for the purpose of securing recognition of that cult by the General Assembly at its present session.

—The new City Hospital at Paris, Ill., was opened January 15. There are twelve beds in the building, and all the equipment including operating rooms are thoroughly up to date.

—Professor Morganroth, of Germany, announces that he has discovered a specific remedy for pneumonic infection in the chemical compound known as ethylhydrocupreinhydrochloride.

—St. Clara's Hospital report, at Lincoln, shows that 616 persons were cared for during the year 1912; 210 operations were performed and thirty deaths were recorded. At the beginning of the present year there were fifty-eight patients in the hospital.

—The Aurora Hospital Association reported during the year 1912 receipts of \$17,942.91, and expenditures of \$13,701.99; and after paying all debts, will have a comfortable balance in the treasury. Five hundred and thirty people were admitted during the year.

—Dr. J. H. Farrell, 93 years of age, and the only surviving member of a prominent family that lived in Peoria fifteen years ago, was picked up on the streets clothed in rags and half frozen to death, with a request to be taken to the asylum. Dr. Farrell was formerly possessed of unusual ability as a physician, but his desire to roam was his undoing.

—Dr. S. Weir Mitchell will deliver an address on "The Profession of Medicine in the War of the Rebellion" at a banquet given in his honor by the Physicians' Club of Chicago, at the Hotel La Salle, Tuesday evening, February 25. Members of the Chicago Medical Society, Illinois Medical Society and the Chicago Neurological Society are invited to be present.

—Nine doctors and persons arrested in a nation-wide crusade on illegal practices, inaugurated some time ago by the federal authorities, must stand trial on indictments pending against them. Demurrers to the true bills were overruled by Federal Judge Carpenter, following arguments. The following were arrested: Joseph J. Milosch, Walter D. Munn, W. Hubert Miller, George T. Leedle, John C. Message, Felix C. Hartung, James C. Doyle, Arnold E. F. Hasenclever, Margaret Livingston.

—County Judge P. L. Persons, of Waukegan, has ordered that one John McQueen, a 16-year-old boy, whose parents reside in Zion City, is entitled to medical attention, despite the fact that his parents both believe in divine healing. The decision is of special interest because of the cases at Zion City, where medical attention was not given persons who afterward died. An older brother of McQueen filed a petition alleging his brother had been having trouble with adenoids.

—Ward Robinson, secretary of the state civil service commission, announces a list of employees of state hospitals, formerly assistant physicians, who have passed the examination of October, promotional for physician. The list of successful candidates and the hospital where they are now stationed, follows: Clifford C. Ellis, Robert H. Rea, K. M. Manougian, Barnet Lemohen, Chicago. Henry L. Krafft, George W. Brook, Thomas C. McLin, Peoria. Charles Rocksher, Samuel L. Gabby, Earl B. Jewell, James T. Rooks, Chas. R. Lowe, Drury L. Fish, Elizabeth D. Carroll, Kankakee. Wm. R. Tutt, Anthony G. Wittman, Oliver F. Hughes, Elgin. Esther H. Stone, Wm. H. Gambill, Watertown.

—The annual meeting of the medical staff of Passavant Hospital, Jacksonville, Ill., was held December 27. Reports of committees and officers were read, and a cabinet was displayed showing *x-ray* work in the hospital during the last two years. A report of the milk-supply was also given. A committee was authorized to look after the matter of arranging for increasing the clinical facilities of the hospital, so that the profession will have better opportunities for study. The election of officers follows: President, Dr. A. L. Adams; clerk, Dr. Grace Dewey; members of medical board, Dr. H. C. Woltman and Dr. C. E. Cole; medical trustees, Drs. H. C. Woltman, C. E. Cole, J. A. Ogram, A. R. Gregory, E. L. Crouch and A. L. Adams; dean of training school, Dr. Carl E. Black.

PERSONALS

Dr. Chadwick has located at German Valley, Ill.

Dr. William O'Rielly, of Canton, has removed to Winchester, Ill.

Dr. M. Harris, of Newton, Ill., has located in Harrisburg to practice his profession.

Dr. J. S. Thrailkill, of Bethalto, will move to Alton and engage in the practice of medicine.

Dr. H. C. Parker, of Indiana, has opened an office for the practice of medicine at Pecatonica, Ill.

Dr. J. W. Calvert, of Dwight, has taken up his residence in Bloomington, and will practice there.

Dr. L. M. Bowman has sold out in Snyder, Okla., and, with his family, is again living in Alton.

Dr. Otto Hauser, who recently moved to Litchfield, has returned to his old practice at Walshville, Ill.

Dr. C. B. Horrell, of Galesburg, is an active candidate for mayor of that city on the Peoples Party Ticket.

Dr. Guy, who recently disposed of his practice in Woodstock to Dr. West, is about to locate at Lincoln Neb.

Dr. Clendenen, of Fulton, is out with a petition for appointment as superintendent of the Watertown Hospital.

Dr. E. M. Rundquist has returned to Rockford to practice, after having spent several years at Missoula, Mont.

Dr. F. Doyle, of Chicago, has located in Jerseyville, Ill., and has established offices in the State Bank Building.

Dr. S. J. Beeson, Chicago, has left for a trip to Australia and New Zealand, returning home via Buenos Ayres and Rio de Janeiro.

Dr. Fred Brian, of San Jose, Ill., has been appointed company surgeon to the Chicago and Alton Railroad, with headquarters at Bloomington.

Dr. A. A. Fitts, oldest physician of the county, was stricken with hemorrhage of the lungs at his home in Batavia and is in a serious condition.

Dr. W. E. Barton, of Wood River, has sold out his practice to Dr. T. C. Smith, of Cressmont, W. Va., and will remove to Collinsville, where he will continue his practice.

The engagement has been announced of Dr. Charles O. Burgess, of Monmouth, and Miss Lura Hardin, of South Bend, Ind. The wedding will take place in the near future.

Dr. J. A. McGee, of Virginia, Ill., has been appointed a member of the Examining Board of Pension Examiners, to fill the vacancy caused by the death of Dr. W. D. Humphrey.

Dr. E. W. Fiegenbaum, secretary of the Madison County Medical Society, delivered an address at a meeting of the East St. Louis Society of Physicians and Surgeons, on the subject, "How to Prevent Insanity."

Dr. M. P. Parrish, of Decatur, has been appointed chief surgeon of the Wabash Railway Employees' Hospital Association, to succeed the late Dr. Moorhouse, who died December 19. Dr. Parrish has been the surgeon in charge of the Decatur Wabash Employees' Hospital.

T. D. Doan, M.D., of Scottville, has been obliged to give up his practice and the secretaryship of the Macoupin County Medical Society, to enter the Modern Woodmen Sanitarium at Colorado Springs, Colo., as a patient. Dr. Doan has been particularly active in society matters, and his misfortune will be greatly regretted.

INJURY TO DOCTOR

Dr. R. A. Mathew, of Morrison, Ill., sustained two broken ribs and other bruises, when his automobile turned turtle and pinned him beneath it.

REMOVALS

Dr. W. H. Ludewig has removed from Rock Island, to Foley, Ala.

Dr. C. W. Hall has removed from Kewanee to 1110 White Building, Seattle, Wash.

Dr. J. W. Calvert has removed from Dwight to Peoples Bank Building, Bloomington.

Dr. W. W. Haven has removed from O'Fallon to 3540 N. Grand Avenue, St. Louis, Mo.

Dr. Henry B. Beeson, 3900 Cottage Grove Avenue, Chicago, has removed to Peoria.

Dr. Frederick Ludwig, U. S. Navy Station, North Chicago, has removed to Government Hospital, Las Animas, Colo.

NEW INCORPORATIONS

Fort Dearborn Hospital and Chicago Anatomical Society, Chicago; educational and general contracting; incorporators, Frederick Greenbaum, Maximilian Spatz, Michael Nelson.

Chicago Medical Service Company, Chicago, \$10,000; to conduct a hospital, furnish medical and surgical aid, etc. Incorporators, E. J. Dougherty, Frank Schmidt and David Phillips.

Consolidated Chiropractic College, Chicago, \$2,500; practice of mental, physical and drugless healing. Incorporators, D. W. Medcalf, Elsie Merkle and Anna Z. Kirwan.

NOT FOR PROFIT

Mercy Dispensary, Chicago; conduct a laboratory and clinic for charitable purposes. Incorporators, George W. Hochrein, Charles Louis Mix, Richard J. Tivnen and Ph. H. Kreuscher.

MARRIAGES

ISAAC MOORE, M.D., Alton, to Miss Lila Luckey, of St. Louis, December 9.

J. J. PEARSON, M.D., of Pontiac, to Mrs. Grace Deedrich Tilton, of Long Point, December 18.

CHARLES ALEXANDER, M.D., of Champaign, to Miss Mary Lateer, of Paxton, January 1, 1913.

PHIL GRIESBAUM, M.D., of Lebanon, to Miss Elizabeth Glanzner, of Trenton, January 2, 1913.

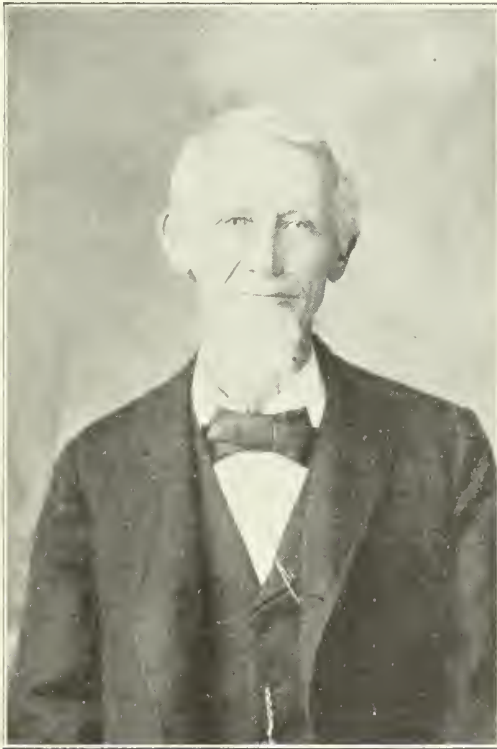
ROSCOE CONKLIN WHITMAN, M.D., to Miss Jessie Edith Collins, both of Morris, December 14.

ALVA SOWERS, M.D., of Chicago, was married to Miss Nina Vittum, of Ottawa, December 17, 1912.

FREDERICK P. COWDIN, M.D., of Springfield, to Miss Margaret Barlow, of St. Louis, Mo., December 16, 1912.

OBITUARY

THOMAS WESLEY SHASTID, M.D., of Pittsfield, died at Augustana Hospital, Chicago, December 6, 1912. Dr. Shastid was born August 26, 1831, at Old Salem, then Sangamon County, a town made historic by the fact that Abraham Lincoln was postmaster and storekeeper there early in his career. His ancestry was French Huguenot on his father's side, and English on his mother's side. His mother was a cousin of Ninian Edwards, the first Governor of Illinois. The family moved to Pittsfield in 1835, where the doctor resided until his death. He was the oldest



THOMAS WESLEY SHASTID, M.D.

practitioner in that county and one of the oldest in the state; he served as president of the Pike County Medical Society; member of the Illinois State Medical Society, and was a member of the Board of Examining Surgeons for Pensions for Pike County. He was a contributor to medical periodicals in the early days of medicine in Illinois, and one of the most successful and best known doctors of Pike County. His sons, William A. Shastid, of Pittsfield, and Thomas H. Shastid, of Marion, are well known physicians in their communities. The interment was made in the Pittsfield cemetery, the Masonic Lodge participating.

DEATHS

JOHN LEHMAN, M.D., of Carmi, died at his home in that place, January 17, 1913.

W. A. GROVE, M.D., died January 9, 1913, at his home in Galva, Ill., after an illness of one year.

JOSEPH S. HUDSON, M.D., died at his sanitarium in Canton, Ill., December 17, 1912, after an illness of five months; aged 63.

W. H. WALLACE, M.D., died at his home in Harrisburg, January 7, 1913, aged 66 years. Death was due from heart trouble.

ELI HOLBROOK GALE, M.D., University of Pennsylvania, Philadelphia, 1865; of Chicago; formerly of Aurora, died December 14; aged 65.

JOHN PRIESTMAN (license Illinois, 1877), a practitioner since 1855; formerly of Neponset, but a resident of Chicago since 1885; died at his home, January 1, from intestinal obstruction; aged 83.

JAMES J. EGAN, M.D., College of Physicians and Surgeons, Chicago, 1906; an ambulance physician of the Police Department; died at the Cook County Hospital, December 22, from pneumonia; aged 31.

WILLIAM PATTON, M.D., of East Moline, died December 28, 1912, at the sanitarium of his brother in Montreal, Canada, where he had been since November, receiving treatment for heart trouble. Deceased was 52 years old.

WESLEY DAWSON, M.D., formerly of Homer, Ill., but of late years a resident of St. Petersburg, Fla., died at that place December 30, 1912. He was born in Pennsylvania and was a soldier of the Civil War. The body was brought to Homer for burial.

FRANK RAYMOND WHEELER, M.D., Northwestern University Medical School, Chicago, 1903; a member of the American Medical Association and American Academy of Medicine; died at his home in Auburn, Ill., December 21, from pneumonia; aged 35.

W. O. SMITH, M.D., of Kimmunity, Ill., died at the Old Soldier's Home in Quincy, Ill., December 20, 1912, aged 75 years. He graduated from the Ohio Medical College, 1873; a veteran of the Civil War, Company 1, 40th Infantry, Ill. Had practiced in Kimmunity for thirty-nine years.

F. J. JENKS, M.D., for twelve years assistant superintendent of the Northern Illinois Hospital for the Insane at Elgin; head of a sanitarium at Rockford, Ill., died December 25, 1912, at a hospital in Aurora, of heart trouble. Dr. Jenks was a noted alienist, and at the time of his death, was 49 years old.

WILLIAM STANDING, M.D., Missouri Medical College, St. Louis, 1871; for ten years a member of the faculty of the Physicians and Surgeons College, and a former practitioner of Coulterville, Ill.; for twenty-seven years a practitioner in children's diseases in St. Louis; died December 15, from pneumonia; aged 66.

HOSEA H. MOORE, M.D., died at his home in Fairfield, Ill., January 8, 1913, after an illness of several months with heart trouble. Dr. Moore was born in Washington County, Ill., November 18, 1842, and lived for a long time at Lebanon, Ill. He was a graduate of the University of Michigan, and a member of the Illinois Legislature in 1890.

E. K. SHIRLEY, M.D., of Whitehall, on January 10, slipped on the ice, and striking his head, rolled into a ditch partly filled with water and was drowned. Dr. Shirley was the son of the late Dr. G. Y. Shirley, of Jacksonville. He is survived by four children and one brother, Dr. H. B. Shirley, of San Diego, Cal. Dr. Shirley was 57 years of age.

A. T. HENTON, M.D., of Bloomington, died at his residence in that city, January 5, 1913, after an illness of three weeks; aged 65 years. Dr. Henton's death came just a week after the death of his wife. Deceased was born in Washington Court House, Fayette County, Ohio, January 19, 1848. In 1853 he came to Illinois with his parents and settled near Old Town, where he made his home until 1891, when he moved to Bloomington. He was a graduate of the Cincinnati Medical College.

J. J. McELROY, M.D., for many years a practitioner of Rossville, Ill., died at the home of his daughter in Decatur, where he had been spending the winter; aged 84 years. Dr. McElroy was born near Cedarville, Ohio, in Greene County in 1827, and for fifty-five years was a practicing physician; he was surgeon in the 125th Illinois Infantry; graduated from Starling Medical College, Columbus, Ohio, in 1857, and then entered Ann Arbor for two years' study. After graduating from Ann Arbor, he entered the College of Physicians and Surgeons in New York City. He is survived by his wife and two children.

H. W. MOOREHOUSE, M.D., of Danville, died December 19, 1912. For over twenty years Dr. Moorehouse had been chief surgeon of the Wabash Railway, and was largely responsible for the excellent hospital system of that road. He was 68 years of age; a native of Fountain County, Indiana. His father was Dayton C. Moorehouse, who afterwards removed to Danville and became sheriff of Vermilion County. Dr. Moorehouse was a veteran of the Civil War. He is survived by his widow and daughters, the Misses Katherine and Margaret. A large attendance at his funeral was an eloquent tribute to the esteem in which he was held.

NEW BIOLOGICAL LABORATORY

The handsome building we are illustrating has recently been added to the group of biological laboratories of H. K. Mulford Company at Glenolden, Pa.

The building is constructed entirely from basement to roof of hollow tile and concrete, making it a fireproof structure throughout.

It is divided into departments, each department being a unit, and complete in itself. The east end of the building is devoted to the handling of serum and globulin products. On the first floor bleedings are received from the bleeding-room, serum or plasma is removed from the clot or from the corpuseles, as the case may be, and the product stored immediately in cold-storage rooms belonging to this group.

When the serum or globulin has been tested and is ready to be finished, it is delivered to the group of antitoxin and serum filling rooms.

The bulk stock is kept in cold-storage rooms connected with this group. Immediately adjoining the twenty filling-rooms is the labeling- and packing-room for serum and globulin products. This group also has its own cold-storage rooms. Elevators at each end of the building convey the completed packages to the shipping-rooms. After inspection and checking off against a duplicate set of records, shipments are made.

Each of the twenty filling- and serum-rooms is supplied with washed and filtered air. The special apparatus used for this purpose is guaranteed to remove 98 per cent. of suspended matter from the air supplied to these rooms. Not only is the air filtered, but its humidity and temperature are controlled, thus giving the employees the benefit of the best possible working conditions.

On each floor glass partitions between the halls and rooms permit the demonstration of the work to visitors without their entering the rooms themselves.



New Biological Laboratory of H. K. Mulford Co.

The laboratory floors are of asbestolith. The advantage of this material is that there are no seams or cracks and is impervious to fluids. It partakes more of the nature of wood than of cement, and because of a cushiony layer beneath the surface crust, is more acceptable to employees than cement floors.

On the lower floor are the stock-rooms. The sterilizing-rooms are in a separate building well supplied with ventilating sky-lights.

On the third floor are found the lecture-room, library and museum.

The entire plant is arranged and managed under the unit system. A separate building or group of buildings, or in some cases portions of larger buildings, are devoted to the preparation, standardization, packing and shipping of each product. Each unit is in charge of scientific experts in their particular branch of bacteriology. Cold-storage rooms supplied with cold air from a central refrigeration plant form part of each individual unit arrangement. This makes it possible to keep on hand a large stock of biologicals without danger of deterioration, so that the company is prepared at all times to supply these products and to cope with the enormous demands often created by epidemics of the various infectious diseases.

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No. 3

ORIGINAL ARTICLES

AN EFFICIENT AND EASILY REMOVABLE NASAL PACKING *

E. FLETCHER INGALS, M.D.
CHICAGO

Notwithstanding the fact that many patients who have suffered operations in the nares might go to their homes without packing and escape serious hemorrhage, yet in many bleeding that alarms the patient comes in spite of the packing. In a considerable number, bleeding that is alarming to the surgeon comes on and in a few fatal hemorrhage has occurred, therefore, I believe that for many reasons careful packing of the naris should be made in most cases after cutting operations on the septum, turbinated bodies, or accessory sinuses. Sometimes packing is required after the removal of mucous polypi, but usually it is not necessary when only a snare has been employed. While in a large number of cases, without packing, no serious hemorrhage would occur after the usual operations, it cannot often be desirable to waste even 2 to 4 ounces of blood. General surgeons prevent all bleeding possible and their reasons for doing so would largely be valid in intra-nasal surgery; therefore, I cannot think we are justified in subjecting patients to the risk of bleeding. Usually bleeding would not occur for several hours after the operation; then if the patient had gone home he would at least be likely to be greatly alarmed. It seems to me unfair to subject the patient to this distress aside from the direct injury resulting from the loss of blood. If there were no other reasons for packing, the peace of mind and comfort of the surgeon make it well worth while.

Often the parts are in such condition that packing is necessary to hold them properly in place.

* Read before the Chicago Laryngological and Otological Society, Dec. 17, 1912.

I have known of several very alarming hemorrhages after intra-nasal operations, in which the patient's life was saved only by prolonged and persistent treatment, much of it very painful to the patient, and I have known of two or three fatal results. One of these occurred in my own practice, the patient dying from the effects of secondary hemorrhage, although I had stopped the flow thirty-six hours before this sad termination.

The only objections that I can see to packing of the nares after cutting operations are: (1) obstruction of respiration; (2) pain from pressure; (3) prevention of the escape of pus, and (4) pain from removal.

The obstruction of respiration cannot be considered a real objection, because usually the patient has already become accustomed to this inconvenience and even if packing were omitted, swelling of the tissues resulting from traumatism would usually stop the nares.

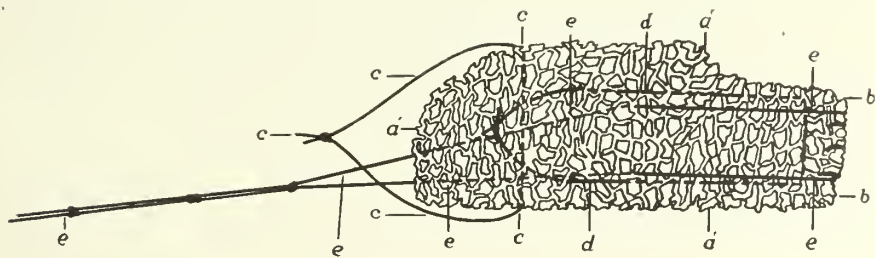
Pain from pressure is a serious objection if the packing is too firm. The surgeon's experience must guide him to get just the right amount of pressure; and he should make provision against pain by suitable analgesics. I am accustomed to give the patient five or six doses, of 5 grains each, of phenacetin, directing one every hour for four or five hours, if required, for pain; at the end of this time if the pain is still troublesome, or if the patient is nervous, as he is likely to be from the cocaine, I give him half a grain of codein and have the dose repeated in two or three hours, if needed.

Purulent discharges after operations for infected sinuses will almost necessarily occur, and if the nares is firmly packed, the pus may be forced back so as to cause infection of other parts. This danger cannot altogether be avoided, but it should be guarded against by removing the packing as soon as the danger of hemorrhage has passed. Usually the packing may safely be removed within from sixteen to twenty hours.

Pain caused by removal of the packing is by far the most serious objection to its use. To avoid this, various methods have been adopted, most of which fall very short of the desired result, as can be appreciated only by those who have themselves suffered from the operation. The same remark would be applicable to the dressing after a large percentage of operations, and I feel there is no one thing in which surgeons are so remiss as in their failure to prevent suffering at such times.

I have tried many different dressings after intra-nasal operations designed to prevent secondary hemorrhage and avoid pain at the time of their removal. The most satisfactory one is made of rubber sponge, the form of which is peculiarly adapted to favor coagulation of blood. It is made of rubber sponge preferably about 4 cm. thick, and from 5.5 cm. to 8 cm. long. In preparing the packing the sponge is grasped tightly and compressed between the blades of a long strong forceps like Pean's hysterectomy forceps, 10 inches long, or like my straight esophageal forceps. The blades are closed tightly as possible and locked by the catch on the handles. Then the sponge is trimmed off with scissors close to the blades. When the blades are opened the sponge at once expands and we have a

piece of rubber sponge which should have been cut to about 2 mm. greater in thickness than the extreme width of the naris we wish to pack, while the tissues are shrunk down with cocain and epinephrin. The edges of this piece are trimmed down so that it will fill the naris vertically, and when we have fear of hemorrhage far back, the distal portion of the sponge, *a' b b a'*, should be left about 2.5 cm. longer, and about 5 to 8 mm. less in height (width). This is done so that this portion, after being pushed through the naris back to the pharyngeal wall can be drawn forward to plug the choana. For this purpose the whole piece should be about 8 cm. long, whereas, if only the naris requires protection, a piece 5.5 cm. in length, *a, a', a'*, will be long enough. It is important that this sponge be not too thick, otherwise, in spite of its softness, pain will be caused by the constant pressure that it will exert. The sponge having been fashioned to fit the naris, a strong linen thread, *c' c'*, is passed through from above downward about 1.5 cm. back of its proximal end, *a*, and the two ends of this thread are tied together so as to form a loop about 4 cm. long, by which the sponge may be withdrawn. To prevent the sponge from being torn apart in removal, a similar thread, *d, d*, is sewn through and through from before backward at the upper and lower part of the



packing, and this is tied in front of the thread passed vertically, *c', c'*, in forming the loop for extraction. Thus prepared, when the loop is pulled on all the sponge will have to come with it. When it is desired to plug the choana more carefully the long piece of rubber is used. A strong thread, *e*, is passed through the sponge about 4 cm. in front of its posterior end. This is then fastened to the posterior end near one edge, and by sewing over and over along the posterior end to near the other edge, when the thread is carried forward and through the sponge at the same distance from the posterior end as the other end of the thread. The two ends of the thread are then tied together forming a loop about 7 cm. long, which, when pulled on, will double the back end of the sponge on itself and draw it into the choana. When the packing has been made ready it is rolled up, compressed tightly and immersed and allowed to expand in a strong solution of formalin; while thus immersed it is alternately compressed and allowed to expand until the solution has permeated every part. It is then allowed to soak in the solution until fully sterilized and then is washed thoroughly in sterile water. It is then ready for use. In introducing this packing it is grasped firmly between the blades of a

strong forceps shaped like the ordinary ear forceps, but the blades should be about 4 inches long and there should be a catch to hold them together, until the surgeon is ready to detach them. The mucous membrane is then smoothed down and long, thin spatulas introduced on both sides of the naris to prevent too much friction as the sponge is crowded in. With the forceps the packing is then pushed back as far as desired, the forceps are released, and the sponge expands to its full size; something is then placed against the anterior end of the sponge to prevent it from being pulled forward and the forceps and spatulae are withdrawn. It is usually best to push the sponge back somewhat farther than it is to be left and later draw it forward to the desired position. A pledget of cotton is then placed in the nostril and the patient may go home confident that there will be no serious bleeding. If it has been a case where the choana was to be specially packed, while the sponge is held back by something pressed against its anterior end, the longer loop is pulled on, whereby the posterior end of the sponge is doubled on itself and drawn into the posterior naris. After fifteen or twenty hours this packing may be withdrawn, often with no pain and always with much less than caused by other packings that I have tried. When for any reason a large packing has been put in and traction on the loops for removing it causes pain, the patient may be given a few whiffs of chloroform or some other anesthetic, and then the packing can be pulled out quickly. For this purpose, I use chloroform in the following manner: In the bottom of a 2-ounce, wide-mouthed bottle I place a sponge that will about one-third fill it, and on this pour a drachm of chloroform. The patient holding this in his hand, places the mouth between his lips and breathes deeply at the rate of about thirty respirations per minute, until he begins to feel the effects by dizziness or a sense of losing himself, then the surgeon, who has hold of the loop, pulls the sponge out in about a second without causing pain. The patient immediately recovers from the chloroform. There is no possible danger from using chloroform in this way for the patient would drop the bottle before becoming unconscious or taking too great a dose. Holding the bottle in the hand in this way warms the chloroform and assists in its rapid vaporization.

In cases when for any reason I have had reason to fear hemorrhage, I have rubbed on those portions that would come in contact with the wound a powder consisting of quinia urea hydrochlorate, 1 part; acid gallic, 1 part, and acid tannic, 3 parts. This causes a clot firmly adherent to the mucous membrane and also enmeshed in the rubber so that withdrawal is apt to cause pain, unless some anesthetic is employed, but it may be pulled out quickly. I think it is seldom necessary to use the astringent powder and that the patient is more comfortable without it, nevertheless, in those predisposed to hemorrhage, I should highly recommend it.

RHEUMATISM IN CHILDREN

WITH SPECIAL REFERENCE TO ITS CLINICAL ASPECTS *

JOHN G. CAMPBELL, M.D.
CHICAGO, ILL.

The rheumatic infection as seen in childhood is distinguished clinically by its dissimilarity to the adult type. Previous to 2 years of age all manifestations of the disease are extremely rare and yet must be kept in mind as a pathologic possibility. Above 10 or 12 years the adult type predominates. It is the period between these two age limits in which the symptom-complex peculiar to childhood is seen and to which this paper will be confined.

There is no evidence against the assumption that any specific etiologic factors which obtain in the adult are not present in childhood. Indeed, it is the picture of the disease in childhood which gives the strongest support to the conception of its being a general infection, while the adult manifestations are more typical of a local joint disease. Its incidence as to climate and season are the same as in adults, which may also be said of occasional distinct hereditary tendencies. The predominating susceptibility of girls remains till about 20 years of age, above which age this is believed by most observers to be reversed.

It is in the clinical aspects of rheumatism seen in early life that the greatest interest lies. He who reserves a diagnosis for a symptom-group showing sudden onset with a marked febrile reaction, the appearance of single or multiple joints presenting pain, swelling and redness, local heat, etc., will very frequently find on his hands after a little careful observation an affection having no relation whatever to rheumatism. In fact, the pure articular phenomena of rheumatism become a matter of secondary importance. Some of the most severe cases of endocarditis have occurred in children in whom it was impossible to learn that they had ever in their lives had a joint pain.

Few joints are involved and the monarticular form is occasionally seen. Knees, ankles and the small joints of the hand and foot are most likely to be affected. The local appearance of the joint is usually only little changed and perhaps none at all. Pain is relatively slight, often-times not being sufficient to compel the child to give rest to the inflamed joints. There may be only an indefinite aching condition, referred to joints or muscles, and a temperature of 100 with a history of a preceding tonsillitis. An ordinary "stiff neck" may be the first and perhaps the only thing to attract attention. The intermittent muscular aches chiefly referred to the legs and which have been termed by our grandmothers and certain of our professional forefathers as "growing pains," are worthy of consideration and a careful search made for other signs of rheumatism. Marked symptoms of a clearly defined character may follow a few days of gastro-intestinal disturbance, mild temperature and general malaise, without anything to draw attention to arthritic inflammation. The

* Read at a meeting of the Englewood Branch, Chicago Medical Society, Dec. 3, 1912.

extremely rare cases seen during the infantile period may first show restlessness, slight fever and an unusual cry. Examination will reveal that the infant favors one extremity and screams when certain joints are touched or moved. These cases will need to be differentiated with great care from scurvy and tuberculosis.

English writers lay great stress on the existence of nodules. These are rarely observed in this country, whereas in Great Britain they are frequently seen. When found, Still believes them to be pathognomonic of rheumatism and always to indicate a severe infection. They vary in size from a millet seed to a split pea, and are found most commonly over the olecranon process and condyles of the humerus and femur. In severe cases they may be felt over any subcutaneous bone, in the ear auricle, or on the superficial tendon sheaths. They are due to a local inflammatory process and their microscopic structure is identical with that of endocardial vegetations.

The course is a varying one. Many cases will recover in a week while the average duration is about two weeks. In children under 6 or 7 years of age where the frank articular form is rare, the vague indefinite symptoms may clear up, in a few days or a few weeks, only to leave the child with an endocarditis which will prolong the convalescence and perhaps permanently compromise the social and economic future of the individual.

There are certain conditions allied chronologically and probably etiologically with rheumatism in children which are in importance equal to the original infection. Endocarditis, tonsillitis and chorea form a triad whose frequent association with rheumatic arthritis leaves small doubt as to their relationship. First of these in point of incidence is tonsillitis. It has long been noted that rheumatic manifestations often follow promptly in acute tonsillitis and that children having repeated attacks of tonsillitis will show other evidences of a rheumatic nature. An endocarditis may occur after an acute infection of the tonsil without articular or other signs of rheumatism. There are many facts in evidence at the present time to suggest the tonsil as the atrium of the infection. While the future may or may not prove this, certain it is that a very close relationship exists. Assuming the tonsil to be the rheumatic atrium, it is a logical deduction to believe that the severe muscular or joint pains so constantly accompanying a tonsillitis are manifestations of true rheumatism and that it is only the natural immunity of the individual that protects him from a frank rheumatic attack.

The frequent occurrence of endocarditis renders it one of the most characteristic features of childhood rheumatism. When we consider that it complicates about 50 per cent. of all cases, the seriousness of the affection is pressed home. It not only is seen during the course of a classical articular outbreak, but is often distinguished by its insidiousness. It often happens that not until the wasting of cardiac disease forces its attention on the parent is the child brought under medical observation, and then with no thought of anything akin to rheumatism having ever existed. The history may bring out nothing or at most not more than a

preceding tonsillitis, some vague joint soreness, or complaint of muscular aches which have been cast aside as a manifestation of Nature's exultation over a very rapidly growing child. If the history shows nothing and should physical examination reveal the characteristic nodules, it renders the nature of the endocarditic inflammation positive and the prognosis unfavorable. The mitral valve is most commonly affected and the apical systolic murmur of insufficiency is the usual one found, although a double blow is occasionally heard. Pericarditis is likely to occur with its classic friction rub and usually clears without effusion. Cardiac dilatation without evidences of endocarditis but associated with a rapid or irregular heart may be the only manifestation of cardiac disease.

About half of all cases of chorea are either associated with other definite rheumatic symptoms or give a history of preexistent rheumatism. It has, however, been observed to precede all other symptoms and to improve rapidly during the continuance of joint symptoms only to recur again on the subsidence of the articular trouble. The effect of the rheumatic toxin on the nervous system is seen not alone as chorea. The rheumatic child is essentially a nervous child, hypersensitive or timid. He may become uncontrollably excited during his play, be subject to fits of anger, night terrors, headaches and the like.

The diagnosis is often extremely difficult. As a broad proposition it is safe to say that a diagnosis of rheumatism in a child under 2 years of age is usually a mistake and, it might be added, most of the mistakes are made under this age. During this period the condition most frequently confused is scurvy. Most scorbutic children are bottle-fed and under-nourished. The swelling is not confined to the joint, but spreads out over the long bones. These points with the blue, spongy or bleeding gums and the age should render this disease easily recognizable. A sudden onset, with a sharp rise in temperature, marked articular swelling, pain, redness, etc., whether this be multiple or monarticular, is more likely to be a secondary arthritis or a primary septic arthritis. The diagnosis in a girl baby might be cleared by microscopic examination for gonococci in the vulvovaginal discharge. Tuberculosis must always be carefully considered whenever a monarticular arthritis exists for more than a few days. The diagnosis may be particularly puzzling when the hip-joint alone is affected. All arthritic manifestations of rheumatism tend to a short, self-limited course, whether treated or untreated, while tuberculosis persists. Acute epiphysitis and osteomyelitis are to be mentioned as diagnostic possibilities. As the disease occurs in older children and approaches the adult type the diagnosis becomes more easy. In many cases, however, it will be made only by careful exclusion, the main points on which it will rest being the vague character of the local symptoms, either articular or muscular, moderate temperature, and a tendency for the local symptoms to shift their location. If in addition to this indefinite symptom-group there is obtained a history of preexistent chorea or frequent attacks of tonsillitis, the diagnosis is strengthened, while coexistent nodules or an endocarditis would render it positive.

The prognosis will depend on the nature of the complicating features, if any occur. Rheumatism in children with only arthritic manifestations is an inconsequential affair. Considering, however, the frequency of endocarditis with its own distressing chain of symptoms extending over a lifetime, it must be considered as a serious disease.

The treatment does not differ materially from the principles laid down for the adult type. Children who cannot take the salicylates without much gastric irritation, do very well on the alkalies alone. I wish to lay special emphasis on the necessity for keeping a child in bed three or four weeks after all local symptoms have subsided. This will greatly minimize the chance of a complicating endocarditis.

7143 Princeton Avenue.

INFANT MORTALITY AND EUGENICS

MEYER SOLOMON, M.D.

CHICAGO

The question of infant mortality is one of the most important problems which presents itself for serious consideration to all thinkers along sociologic and eugenic lines. It is necessary that all who are interested in the subject of eugenics, and especially those who believe in its principles and go by the name of eugenicists, should have a definite understanding of the causes of infant mortality and of the relation of infant mortality to eugenics. The eugenicist has very many problems to solve, certain definite conditions—existing situations to meet.

Few questions are of more momentous interest, of more widespread concern, and of more fundamental importance to the eugenicist than the great problem of infant mortality. What, then, shall be our attitude toward this subject? We must meet the situation face to face. We cannot rudely push it aside as not worthy of consideration; nor can we complacently and purposely ignore it, for it is ever showing evidence of its existence everywhere about us. And so let us face the question, meet it in the open and come to definite conclusions with regard to its solution, its eradication and its prevention.

The essence of eugenics—the eugenic battle-cry, let us call it, is better babies. Babies make citizens. And good babies should mean good citizens. Good citizens mean good families. And since it is the family which is the real, practical unit of society, good families mean good social, political, economic and industrial conditions. This means life, health and happiness for the community and hence for the individual. What do we mean here by “good?” We mean good in physical health, good in mental qualities and good in morality. Hence goodness, from the eugenic standpoint, includes not only fitness but worth and morality also. If, to procure as many eugenically desirable babies as possible, it is necessary to limit their quantity, then let us limit their number wherever and whenever it is proven necessary. It is not quantity but quality which we now seek. If we can get both the quantity and the quality, so much

the better. Therefore we want better babies, and because of existing economic and social conditions it may be that to get better babies we must also have fewer babies. Let us see.

Infant mortality destroys quite a large proportion of our population. It is variously estimated that of all those born, approximately one-fifth to one-third die before reaching the age of 5. The mortality is, of course, greatest during the first year. At the recent International Congress of Hygiene and Demography held in Washington, a single electric light used to illustrate the death-rate among the infants of the world, flashed every ten seconds, indicating that an infant under 1 year of age had died somewhere in the world. According to this light, 8,640 infants die every twenty-four hours. At this same congress the New York City Health Department, by means of a battery of lamps that showed graphically the age at death of an average 100 babies born in the city in 1912, gave the mortality among babies up to 1 year of age as 11 per cent. Dr. Harvey W. Wiley, speaking recently (October, 1912) on "The Conservation of Man" before the Conservation Congress in Indianapolis, declared that one-fifth of all the deaths occur in children under 1 year old. This mortality increases as we approach birth. In other words, the younger the infant the greater the dangers, the more chances of being attacked and overcome by disease of some sort or other. Eross,¹ in 1894, compiled and studied the infantile death records of sixteen large cities of Continental Europe. He found that nearly 10 per cent. of all infants born died during the first month of life. Of course, since that date, these figures have been considerably lowered. But the seriousness of the problem has not lessened and the latter is as vital and urgent to-day as it ever was. Although there has been a gradual reduction of infant and child mortality in the past twenty years, this lowering has been effected especially in those over 3 months. We know that the highest mortality is in the first month of age. It is during this time that 25 per cent. of the deaths of the first year take place. As the infant becomes more capable of adjustments and readjustments, more stable in metabolism and more resistant to infection and to causes which interfere with proper growth and development, the mortality gradually lessens up to the age of 5, after which and up to the age of 15 the death-rate is remarkably low.

Now, what are the causes of this great infant mortality and the subsequent child mortality and morbidity? Can it be still further lowered or eradicated? If so, how? And if such reduction or eradication be possible, is it eugenically desirable to accomplish this result—ought we to interfere?

First, as to whether the death record among infants can be still further lowered. Of this there is no doubt. It has been stated that nine out of every ten children born—90 per cent.—are physically fit to live, if only given the chance. That means that one out of ten—10 per cent.—are unfit. By first considering the causes of infantile mortality we

1. Holt's Diseases of Infancy and Childhood, D. Appleton & Co., New York, p. 44, 1912 edition.

will then be in a position to form an opinion as to how this mortality can be reduced and to give an estimate as to the possible extent of this reduction.

Holt² says that the reduction in infant mortality in New York has taken place chiefly in gastro-intestinal diseases, marasmus and debility in infants over 3 months old, and in the acute infectious diseases, particularly diphtheria. Without doubt, from the standpoint of relative frequency of occurrence, and hence influence in vital statistics, the use of diphtheria antitoxin has been the most potent single factor in the causation of the reduction of infant mortality after the first year of life. However, on the other hand, there has been an accompanying increasing mortality from such other causes as acute respiratory diseases, prematurity and diseases of the new-born.

The gradual lowering of the infant mortality record during the past twenty years has been accomplished by the introduction of more scientific and accurate methods in the diagnosis, treatment and prevention of disease. The knowledge of infant feeding and infant hygiene has been gradually more and more widely diffused. The general milk-supply has been improved. Milk depots have been established and have furnished to the people, at small cost or free, good pure milk, whole or modified. The increasing realization of the relation of milk-supply in summer to infant mortality, and the inculcation of the principles of the proper care of milk and of obtaining clean milk by systematic inspection or pasteurization and examination and regulation by the health authorities, have contributed largely toward this result. The prevalent custom of sending children to the country in the summer months; the greater supervision of the comfort, health and welfare of infants, especially during the summer months, by municipal or private philanthropic institutional or visiting nurses and physicians; the greater improvement in sanitary conditions and the increasing appreciation of the tremendous importance of health in infants in its relation to the subsequent health and constitution of the child and adult—all these have contributed their share, more or less, to the gradual reduction of the infantile death record.

Nevertheless it seems that our methods have been insufficient. There are still left means by which we can very materially and certainly lower this death-rate.

Let us now take up, in order, the various causes of infantile deaths. From 3 to 5 per cent., according to some even 10 per cent. (which latter figure is of course an exaggeration of the true state of affairs) of the population of the United States is permanently defective and is an economic as well as a moral burden on all the others. This class includes paupers, feeble-minded, those of criminal tendencies (the criminally inclined), epileptics, insane (except the acute cases not hereditary), those constitutionally weak, those predisposed to certain diseases and those having defective sense organs. The infant mortality among those thus burdened by heredity, especially where there is a lack of responsibility of the parents and consequently poor care for the offspring, is

2. *Idem.*, p. 42.

naturally in many instances greater than amongst others not so handicapped. Consequently, for this reason alone, wherever indicated, the birth of such children should be prevented by the most approved form of negative eugenic practice. In many cases, as in syphilis, toxic, infective, exhaustive and many disturbed metabolic, lowered nutritional states in the mother or father, especially the former, or in both, the unfitness of the newly-born child is due not to true racial heredity but to the direct action on the germ cell, male, female or both, of true racial poisons or impoverished blood. Such conditions where possible of correction or prevention in the parents, will thus obviously act in a similar manner in reducing infantile deaths.

The relation of venereal diseases in either parent, and gynecologic conditions in the mother to sterility, abortion, still-birth and infant mortality need only be referred to here to receive due recognition and appreciation as direct causative factors in this respect.

The induction of abortion for other than therapeutic purposes cannot, of course, be too strongly condemned. True, only too frequently it seems but cruel to permit certain individuals to give birth to children and to bring them into such wretched surroundings and such miserable conditions with such neglectful, ignorant and irresponsible parents. Perhaps there will come a time, who knows, when we will advocate or permit the induction of abortion for eugenically therapeutic or prophylactic purposes. But according to the standard of our present customs, sentiments and laws, we must all oppose such principles.

Prevention should begin at the very start—before union of the germ cells. The writer is therefore in favor of the voluntary prevention of conception. He will not enter here into a discussion of this very important subject, for it is not the place nor will the limits of this paper permit.

According to the report of the New York milk committee, referred to by Jacobi,³ 17 per cent. of infant deaths are due to congenital troubles, while one-third of all deaths from these causes occur in the first month. In other words, of all the infants who die, congenital trouble is the direct cause of 16.6 per cent., while 5.6 per cent. die during the first month. This state of affairs is almost unbelievable. But the figures are true—or almost true.

As mentioned previously, those antenatal conditions in the parents which are responsible for so much of this infant debility, infant mortality, infant and child neglect, should be and must be corrected. The propagation of the positively unfit classes, of the feeble-minded and imbecile, the chronically insane, the habitual criminal, the epileptic, etc., should be stopped. The remedy is found in segregation or in sterilization. Those who are positive drains on the vital functions of society, who sap the very life's blood and weaken the constitution of the social organism must be prevented from doing further harm in the future. This applies equally to hereditary degeneracy or acquired deterioration, to positive incom-

3. Jacobi, Abraham: The Best Means of Combating Infant Mortality, Jour. Am. Med. Assn., Med. Rec., New York, and New York Med. Jour., June 8, 1912.

petence and unfitness wherever it is found and from whatever cause. Consequently those suffering from contagious diseases, especially sexual diseases, as well as the classes just mentioned, should not be permitted to marry before undergoing a thorough mental and physical examination. Just who will be the final arbiter in the case, the state or the individual, the future will tell. It seems that the state is gradually assuming this function. But in any case, both parties to the marriage contract are entitled to know the true mental and physical condition of each other.

The license to marry is as important a question as the admission of a new immigrant or the enrollment of a new soldier, sailor or policeman. In the words of Jacobi,³ "A clean bill of health should precede matrimony."

However, let us not forget the glaring fact that much of this disease, crime and degeneracy, this incompetency, unemployment, maiming and murdering of helpless children, of neglected mothers and of poor, hard-working but true and honest fathers is the more or less direct result of our present social conditions. To this aspect of the question the writer will return later in this paper.

In the consideration of this question of infant mortality, we must view it from several aspects. There is the infant and child. There is the woman and mother. There is the man and father. Consider further the child, least responsible for its birth, its own and existing social conditions. The baby wants and must have a clean bill of heredity. That gives it a proper and just start in life, free from disease, not handicapped at the very outset by sickness, disease and degeneracy. This means a healthy mother and a healthy father. A healthy mother means that the woman must receive proper care before, during and after labor. Jacobi³ tells us that one-half of our babies in all countries are attended by midwives. This proportion holds true for the United States as well as other countries. In some of the most important cities of the United States this percentage is even greater. In New York, according to Jacobi,³ midwives attend 42 per cent. of all births; in Buffalo, 50 per cent.; in St. Louis, 75 per cent.; and in Chicago, 86 per cent.* What does this mean? Are the poor women of our country receiving proper and skilled attendance during confinement? Proper attendance and assistance at the time of labor will prevent much obstetrical malpractice with the resulting maternal and infantile mortality and morbidity. The woman in labor, poor as well as rich, must have skilled assistance whether by doctor, trained obstetrical nurse or trained midwife. At the present time, from the figures above quoted, Jacobi³ believes that there is a distinct utility of the midwives and advocates state legislation providing for the training, registration, licensure, supervision, regulation and control of women engaged in the practice of midwifery. They should be taught, as Jacobi³ says in his address on the "Best Means of Combating Infant Mortality"—which it will do everyone a world of good to read again and again; yes, even to memorize in toto—midwives should be taught, to repeat, "the care of expectant women, the conduct of normal labor, the care of babies

* [A recent compilation of birth certificates filed in the office of the clerk of Cook County shows that midwives record 45 per cent. of the births.—EDITOR.]

immediately after birth, the simple principles in an urgent case of artificial feeding, the diagnosis of abnormalities," so that they might know when to call for help, and, I may add, even the methods for acting temporarily in cases of positive, acute emergency.

Among the indications for the summoning of medical assistance by British midwives are now included, according to Jacobi,³ cases of high temperature, abortion, laceration, illness of the patient, imperfect removal of the placenta, puffiness, convulsions, large varicose veins, sores on the genitalia, malposition, trauma, hemorrhage and venereal diseases. Inversion of the uterus and the presence of a mechanical obstacle like a fibroma or contracted pelvis also find their place here. Midwives should be taught and must know how to give first aid in asphyxia of the new-born, how to keep perfectly clean (thus preventing puerperal sepsis), not to leave the woman, the care of the infant's eyes and the necessity for reporting all cases of ophthalmia neonatorum.

Congenital debility, as Jacobi³ states, is frequently the "result of infection (from the mother) through the placenta, of starvation of the mother by poverty, overwork in factory and poisoning by a chemical," all of which can be prevented by proper care of the woman during pregnancy. Prolonged, unattended or unskilled labor plays a great rôle. The accidents of birth resulting from these causes can be avoided by the presence during labor of skilled assistance—a competent doctor, nurse or midwife. With proper care of mothers during pregnancy and labor, we would prevent many cases of debility and death among infants as a result of suffocation by overlying or by congenital asphyxia, caused by mother or fetus, of atelectasis, and a host of other affections, traumata, hemorrhages, infections, defects and diseases, which swell the list of infantile deaths and crippling, especially during the first few days and weeks of life.

Once the child is born and survives, however well or ill, the difficulties encountered during its birth, its further existence and health depend on the maintenance of proper metabolic balance. Air, food, proper hygiene and decent living conditions are necessary.

Under food, Jacobi³ does well in calling attention to the fact that during life, the infant suffers from a loss of water with an accompanying loss in weight of 10 to 20 per cent. The indication is plain. See that the child gets plenty of water in addition to its food.

Here we come on that great problem of infant feeding, than which few questions are more important and more neglected. Nevertheless it is encouraging to observe that, with the increasing interest in and discussion of pediatrics and obstetrics, infant feeding, infant hygiene and infant welfare, there is decided evidence of the realization by more and more of us of the tremendous importance, the great need for the conservation of human life and health. And this conservation should begin with the child, the infant, the union of the germ cells.

It cannot be too strongly impressed on our patients, let alone our professional colleagues, that far and above all other food, the mother's milk is the best and safest food for a baby. According to Jacobi,³ we find that in infants under 1 year of age, we get a mortality of 6.98 per

cent. in the exclusively breast fed; 9.87 per cent. in those fed on a mixture of breast milk and artificial food; and 19.75 per cent. in those artificially fed. Others, using round figures, tell us that one in five bottle-fed babies dies before it reaches the age of 1 year, while of breast-fed babies only one in thirty fails to reach the 1 year mark. What does this mean? It means that the more we get away from mother's milk, the greater the danger to the health and life of the infant. Many physicians these days seem as willing to advise and take as lightly the insistence of their patients on artificial feeding as if they were writing or asked for a prescription for a most usual, common, minor ailment. We must not fall into or encourage such practice. It is not only not scientific, but it is very pernicious and positively criminal, morally so, even though not legally. The question of a human life is of no little moment. The infant's life is perhaps as important as your own, or at least as your own children's or your friends' children's. Our one object should be to save babies and to raise good, healthy ones.

The writer does not in the least desire in any way to minimize the wonderful strides that have been and are being made in the knowledge of artificial infant feeding. But no matter how much improved our method of artificial feeding may be or may become, it is plain to see that they cannot compare in exact nutritional value and in the certainty of results with breast feeding. One is artificial and always uncertain; the other is natural and certain in its results.

Further, it should not be forgotten that, although the question of properly modified pure milk is of the utmost importance, nevertheless we are appreciating more and more that the fault does not lie wholly with the milk. On the other hand, the kind and quality of milk as a single factor is responsible, it would seem, for only a portion of the morbidity and mortality among infants. There remain the very prominent influences of housing, of heating, of clothing, of feeding, of the general hygienic and sociologic conditions.

At this point it would be well to enumerate the chief causes of death during the different periods in infants and children, and getting our lesson from this, let us see how the infant mortality may be lowered.

Holt,⁴ in giving the chief causes of death during the first year of life, as obtained from a compilation of the combined reports from records of the cities of New York, Philadelphia, Boston and Chicago, with a grand total of 44,226 deaths in the first year, gives the following percentages:

	Percentages.
Acute gastro-intestinal diseases	28
Marasmus, prematurity, etc.....	25.5
Acute respiratory diseases.....	18.5
Congenital malformations, accidents, etc.....	5.8
Acute infectious diseases.....	5.4
Convulsions	3.4
Tuberculosis	2
Syphilis	1.2
All others	10.2
Total	100

4. Loc cit., p. 44.

The Bulletin⁵ of the School of Sanitary Instruction of the Chicago Board of Health of May 25, 1912, gives the following causes and percentages of infant mortality under 2 years of age:

	Percentages.
Gastro-intestinal affections	42
Impure-air diseases	23
Congenital defects and accidents.....	19
Acute contagious diseases.....	6
Tuberculosis	2
All other causes.....	8
Total	100

Under acute gastro-intestinal diseases diarrheal conditions in summer head the list. Under acute respiratory or impure-air diseases, bronchitis and pneumonia are most important. Under marasmus, prematurity, etc., are included congenital debility, inanition and disorders of nutrition of vague, indefinite etiology. Of the infectious and contagious diseases, whooping-cough and diphtheria are most important in the order named. The death-rate during the second year of life is made up largely of gastro-intestinal diseases, acute respiratory diseases, acute infectious diseases and tuberculosis in the order named. From the second to the fifth year the mortality takes its toll from acute infectious diseases, acute respiratory diseases and tuberculosis in order of importance, while from the fifth to the fifteenth year, with its remarkably low death-rate, the same conditions obtain and in the same order as during the ages of 2 to 5, with the addition of diseases of bones, appendicitis, rheumatism and cardiac diseases. When we study this list, we understand the causes of deaths among infants and can then fully appreciate the great problem of prevention and learn where we must strike to lop off the figures of infantile and childhood deaths. We know that most of these conditions are preventable. The death-rate under 2 years of age is much higher than at any other period of life. Of deaths occurring under the age of 2, 80 per cent. occur in the first year. The proportion of preventable deaths from the various causes mentioned above is estimated at 95 per cent. for gastro-intestinal diseases, 75 per cent. for impure air diseases, 50 per cent. for congenital defects and accidents, 100 per cent. for acute contagious diseases, 100 per cent. or less for tuberculosis and 100 per cent. or less for some of the other diseases.⁵ Out of every 100 deaths under 2 years of age, seventy-seven are said to be preventable.

The whole problem it seems to me, resolves itself into dealing with the questions of infant feeding, infant hygiene and the sociologic conditions related to them.

Economic, social and industrial conditions play a great rôle in favoring or ruining the health of babies and their parents. Pinard, quoted by Jacobi,³ found that babies born in poverty weighed 10 per cent. less than those not born in poverty. Many of them were premature. Their mothers were frequently injured, sick or without milk. What was the result? These infants showed three to four times as many deaths when

5. Bull. School Sanit. Instruct., Chicago Board of Health, May 25, 1912.

kept at home as when cared for in a good hospital, while the mothers were too frequently laid low with subinvolution, parametritis and the like.

There are definite causes for this state of affairs. Early rising from the sick or lying-in bed, overworking, underfeeding, neglect, hard work up to confinement, poisoning of working women in trades by such metals as lead—all these are the causes which so frequently lead to the production of infants who are physically or mentally inferior, who show varying degrees of unfitness. But the unfitness in these cases is due not to true heredity but to environmental factors, to racial poisons and impoverishment. The conditions, wages and hours of work in mills, factories and stores, with resulting anemia, tuberculosis and malnutrition among girls and women have much to do with the solution of the problem of the bottle-fed baby and infant mortality.

The new politics of human welfare gives us great hopes for things to be accomplished in the future. The national insurance act in England and the tendency of the political parties in our own country show us that politics is beginning to take a hold on human interests. In the past, American politics have been losing human interests. We all feel that party and personal interests have gradually crowded human interests out. Party platforms have in the main dealt with past issues, with party precedents, with petty sectional interests, with minor considerations and with the personalities of leadership. Health, home, childhood, womanhood, clean streets and decent houses have been neglected questions. But the independent thought and action of the people has gradually forced the political parties to incorporate in their platforms and policies, principles which appeal directly to human interests, which have to deal openly and truthfully with those conditions which directly affect the life and health, the homes and happiness of its citizens. The people are waking up to the real, living issues. And so are the politicians. This tendency is shown in the demands for prohibition of child labor; for a living wage, prohibition of night-work and an eight-hour day standard for women workers; for insurance against old age, unemployment, industrial accidents and diseases; for a federal department of labor; for a national health service; for protection of immigrants; for international arbitration, etc. This means the prevention and insurance against industrial accidents, occupational diseases, overwork, involuntary unemployment and the injurious effects incident to modern industry. It is gratifying to note that a federal bureau of child welfare was recently established by the government as a part of the Department of Commerce and Labor. This bureau is empowered to report on all matters pertaining to the welfare of children and child life and especially the questions of infant mortality, the birth-rate, orphanage, juvenile courts, desertion, dangerous occupations, accidents and diseases of children, employment and legislation affecting children in the several states and territories. The conservation of human resources is as important as the conservation of our agriculture and our industries. As Saleeby put it, the politics of the future must be domestics. The child, the home, the social body, the nation—their health and happiness are of prime consideration. We want

a national department of health with its bureau of vital statistics, where births, deaths and causes of death shall be kept so as to give us an index of the health of the community.

In recent years the birth-rate has been lowered, infant mortality has been decreased, the death-rate has been lessened and the average life in the United States, according to Dr. Harvey W. Wiley,⁶ has been prolonged from 33 to 44 years.

In spite of this progress, we know that there is now going on a widespread and useless sacrifice of the lives and injury to the health of our babies, our women and our men. To get better and healthier babies, we must bring home to the average citizen a full realization of the responsibilities of parenthood, especially womanhood, and the debt we owe to our offspring. Childhood and womanhood must receive society's protection, since it is on them that the constitution and happiness of the family, society, the nation and the future race depend.

It appears to many that to accomplish this we need fewer babies among the poorer classes. This will mean less drain on the health of the mother, less hardship for the support of the home and better care and attention for the offspring. Intelligent limitation of the number of offspring, where it is necessary, because of hereditary, economic or environmental burdens, will do much to bring about this result. This statement is made although the writer is aware that it is claimed that the birth-rate per family has declined from 4.5 at the end of the eighteenth century to 2.0 at the end of the nineteenth century;⁷ that a country is considered degenerate when its birth-rate is low; that the upper social classes are at present practicing limitation of offspring to an excessive degree; and that race suicide and national deterioration and degeneration result when the lower social classes are reproducing at a greater rate than the upper classes. The author also knows that this is especially true when, as in France, the death-rate exceeds the birth-rate, and that the United States, where the death-rate is lower than the birth-rate, depends very much for its increase in population on the influx of foreigners. It is to be noted, nevertheless, that the population of the world, and of each individual country, has steadily increased in the past forty years.

The author is in favor of intelligent limitation of offspring where necessary. He advocates this not because of the principle enunciated by Malthus, namely, that since population increases in geometrical proportion while food supplies increase in arithmetical proportion, the time will come when there will not be enough food to supply the inhabitants of the earth. The writer believes that such difficulties will not arise, thanks to means to be discovered by science to conserve land and food products and thus increase supplies to compensate for the increasing population. The author is in favor of the sensible, necessary limitation of offspring

6. Wiley, Harvey W.: *Conservation of Man*. Paper read before Conservation Congress held in Indianapolis, Ind., October, 1912.

7. Quoted by Nammack, C. E.: *Abortion—Its Social and Ethical Aspects*. Med. Rec., New York, Sept. 14, 1912. pp 479-480.

in order to conserve life and health, and to conduce to human comfort, happiness and welfare. This intelligent, voluntary limitation of offspring should apply to those families where it is found necessary because of hereditary, environmental, financial or other serious considerations.

It is well at this point to recall what Karl Pearson and the school of biometricians have to say. I quote freely from a previous paper on "The Science and Practice of Eugenics or Race-Culture."⁸ The nature of a community depends largely on the selective death-rates, selective birth-rates and the marriage rates. By virtue of Nature's selective death-rate the weaker stock is removed before it has had any or its full quota of offspring. There is thus a natural tendency toward extinction of the weaker, more unfit stocks, this result being greatly hastened by the fact that alcoholism and the vices of civilization seem to occur in marked association with insanity, feeble-mindedness, deafmutism, criminality and generally defective stocks. Pearson shows that among the lower classes one finds a greater net birth-rate, a greater marriage-rate (and that too, at a relatively younger age) and a higher fertility rate (rate of reproduction), while the death-rate, particularly in infants, is selective. Although the death-rate is higher among the lower classes, it is not proportionately compensatory. We find that the "lowest fertility is found in the best stocks; the highest fertility in the degenerate stocks in whom the degree of appreciation of the responsibilities of marriage is at its lowest. The infant mortality, though selectively high among the most fertile and lowest classes, does not compensate for their markedly predominant fertility." Man has thus artificially produced the present condition of relatively greater fertility among the lower classes, thus tending to racial degeneration. "Lower" in the sense used here means constitutional inferiority, physical or mental, which makes an individual of less civic worth. Hence, from the eugenic standpoint, society is divided into classes based not on financial status and social position but on true civic worth.

Even in the face of such statements as those just cited, the sensible eugenicist is not opposed to the anti-infant mortality campaign. On the other hand, as humanitarians we should be, one and all, in favor of it. To be otherwise would signify that we had lost those lately acquired and highly evolved traits of sympathy, altruism, humanitarianism and the feeling of the brotherhood of man. It would signify a return to the order of the beast. Again, since infant mortality, like the social diseases, industrial diseases and the like, destroys the fit as well as the unfit and for this reason is positively anti-eugenic, we should fight it so much the more vigorously, energetically and persistently. We should remember that nine out of every ten children born are really fit if only given a fighting chance for life and health. Many of those who are born unfit are so unfitted not because of familial hereditary conditions in the parents but are the result of acquirements by the parents by reason of vicious

8. Solomon, Meyer: *The Science and Practice of Eugenics or Race-Culture*, Vols. I and II, Twenty-Second Series, *International Clinics*, J. B. Lippincott & Co., Philadelphia.

and faulty methods of living with resulting toxic, infective, exhaustive and disturbed metabolic states. With proper care and environment, training and discipline, many of our so-called unfit can be made and kept fit.

In conclusion, let me say, that the sooner our educational reformation is set in motion the sooner will the general public take an interest in this problem of infant mortality. Education must be made more practical. It must appeal more to human interests and be more individually and socially useful. Less Latin and Greek and more of other, more necessary, more useful studies. General physiology and hygiene, sexual hygiene, mental hygiene, domestic science, the manual arts and vocational training—on these should more stress be laid. Education should give to the individual the proper attitude towards life and its problems.

I think it is Boswell who relates that our friend Dr. Johnson, the lexicographer, was once told that one of the prominent contemporary authors of his day was an atheist; whereon the irate doctor replied: "Yes, he is an atheist—as a dog is an atheist. He has not thought on the matter at all." Too many women bear children without having thought on the matter at all. Women must be taught that, although the supreme function of woman is to bear offspring, she should not bear them as a cow bears them. Children should be born and bred not merely by love and sympathy but by intelligence also. To-day we educate for every kind of business except the business of being intelligent fathers and mothers. Instruction for motherhood and fatherhood is neglected. Girls should receive education for motherhood and for home life. This should include domestic hygiene, sex hygiene, general sanitation, preparation of food, care of babies and the home, and the general principles of nursing. In this way only can we expect infants and children to have sufficient and proper food, fresh air, cleanliness, sleep, rest and exercise; to cultivate the formation of hygienic habits by education, to receive protection from the harmful influences of environment and to be taught and receive the proper hygiene of school life, of puberty and of occupation.

The present day instruction in medical schools must receive deserved criticism here. Give the student more practical work. Give him more pediatrics and more obstetrics, not of the mere book knowledge sort, but actual, clinical, practical, bed-side work. The medical student can get along very well with less, but more practical anatomy, less *materia medica* and less major surgery. Give him more of the ordinary, everyday, necessary knowledge and practice. Medical sociology should certainly receive some consideration in medical curricula. Too many of us have never had our interest aroused, have never been stimulated to think of questions of *medicosociologie* importance, and so this rich and tremendously important field of medicine and sociology receives but little of its full share of appreciation and study. We look to the future for better results.

THE DUCTLESS GLANDS AND DIABETES *

ALFRED C. CROFTAN, M.D.
CHICAGO

(AUTHOR'S ABSTRACT)

The main activity of the sugar metabolism centers in the liver. Here the food sugar is stored as glycogen and delivered to the tissues as needed. If too much sugar is supplied in the food, the glycogen reservoir flows over, food sugar passes through unchanged causing hyperglycemia and (alimentary) glycosuria. If the food sugar intake is reduced or stopped, or, if the consumption becomes greater than the supply (excessive muscular labor, diabetes, certain infections and intoxications), then the liver cells manufacture sugar from proteids and in emergencies presumably from fats (increased N excretion, acetonuria, emaciation).

The fixation and mobilization of sugar in the liver is under the control of the nervous system and of certain ductless glands and of the "hormones" (from *ὀρμῶν* = I excite, I awake) they produce.

Knowledge of ductless-gland action has been acquired from a study, first, of the effect of their removal and of the clinical phenomena following their spontaneous degeneration or congenital absence; second, of the effect of injection of gland extracts or of active principles into normal animals and animals deprived of one or several of the ductless glands; also of the clinical phenomena noted in individuals afflicted with hypertrophy or hyperfunction of certain ductless glands.

The pancreas retards, inhibits, hence regulates conversion of glycogen into the sugar, hence the discharge of sugar from the liver. When the pancreas is removed, or when it is diseased, the sugar outflow from the liver proceeds unchecked. The glycogen reservoir promptly empties itself. Hyperglycemia and glycosuria supervene. To make up this deficit, sugar is torn from proteid and fat molecules by the liver, but even this sugar cannot be utilized and is also wasted in the urine. The pancreas exercises this effect by an internal secretion that enters the circulation through the lymph-stream, for ligation of the thoracic duct or discharge of thoracic lymph through a fistula causes a permanent glycosuria, even with a starch-free diet or in complete inanition. That this is an internal secretion, can further be shown by engrafting a small piece of pancreas under the skin prior to the removal of the gland. No diabetes supervenes, when the pancreas is ablated, the engrafted remnant sufficing to regulate the sugar metabolism. When the graft is removed diabetes appears at once with maximum severity. In parabiotic dogs, removal of one pancreas causes no diabetes or only a mild and transitory glycosuria. After separation of the animals diabetes appears at once in the depancreatized dog.

Whereas the pancreas inhibits, the adrenals stimulate the conversion of glycogen into sugar. The two organs antagonize one another. Intramuscular injection of adrenalin causes glycosuria within a short time,

* Read before the South Side Branch of the Chicago Medical Society, Dec. 17, 1912.

the glycosuria, however, being only of limited duration. Repeated injections at frequent intervals cause renewed sugar excretion for a time. After a few injections, however, glycosuria no longer occurs, a certain "tolerance" having apparently been established. This automatic cessation may possibly be due to counteroveractivity stimulated in the pancreas by repeated adrenalin injections, for in depancreatized animals this adrenalin tolerance never occurs. When the adrenals and the pancreas are both removed, or if the adrenal secretion is excluded from the circulation in depancreatized dogs, only mild glycosuria or none at all occurs. Adrenalectomy alone is followed by hypoglycemia, and in Addison's disease the tolerance for sugar is very high and it is almost impossible to produce adrenalin glycosuria.

The thyroid antagonizes pancreatic activity, while it stimulates adrenal activity. After thyroidectomy, hyperfunction of the pancreas, occasionally with hypertrophy of the islands of Langerhans, occurs; sugar tolerance increases and adrenalin causes no glycosuria. In myxedema adrenalin glycosuria is also impossible to produce and the sugar tolerance is high; after thyroidectomy removal of the pancreas does not produce glycosuria. Thyroid feeding, on the other hand, produces a reduction of the sugar tolerance, and if enough thyroid is given, glycosuria. In Basedow's disease the same phenomena occur.

The parathyroids inhibit thyroid action. Thus after pure thyroidectomy no glycosuria occurs, but as soon as the parathyroids are also removed sugar is promptly secreted. After parathyroidectomy sugar tolerance is reduced and adrenalin glycosuria brought about by small doses.

The hypophysis is antagonistic to the pancreas and is associated with adrenalin hyperfunction and thyroid hypofunction. Thus in acromegaly glycosuria is very common; whereas in dystrophia adiposogenitalis astonishing degrees of carbohydrate tolerance are noted.

That the various ductless glands play a commanding rôle in the carbohydrate metabolism is clear, even from the trite statement of the above facts. The sympathetic nervous system seems to govern to a large extent the plus or minus of these activities, in some instances directly, in others by way of the adrenals; for the adrenals are merely a part of the "chromaffin system," that is, of a mass of chromaffin cell groups distributed throughout the sympathetic in small and large congregations. The sum total of the chromaffin cells other than the adrenals is probably greater than that of the adrenals alone, and their activity correspondingly important; hence removal of the adrenals alone is an incomplete experiment permitting only limited conclusions, for by this operation only the minor part of the chromaffin system is removed. The peculiar rôle of the sympathetic and its correlation with the chromaffin system, notably the adrenals, is manifested by experiments with piqure glycosuria. This is a glycosuria caused by sympathetic irritation, centrally, in the piqure area of the medulla. When the adrenals are removed piqure causes no glycosuria. If the right splanchnic nerve is cut, piqure again fails, whereas irritation of the adrenals or injection of adrenalin still

causes sugar excretion. After thyroidectomy both piqure and adrenalin glycosuria fail to occur—a certain amount of carbohydrate is mobilized, but it is apparently consumed by the overactivity of the pancreas. After pancreas removal the glycosuria becomes more intense both by piqure and adrenalin. Adrenalin, therefore, acts on the peripheral sympathetic apparatus, whereas piqure acts centrally on the same apparatus.

Where ductless glands inhibit or stimulate, the action is as a rule reversible, two glands antagonizing or reinforcing one another mutually. It is altogether too early to schematize the chemical correlation between the various glands, although attempts in this direction have been made; one of the most interesting examples being a diagram showing a pancreas-adrenal-thyroid “triangle,” but it is not convincing. The whole process is concerned with establishing and maintaining under widely varying conditions the balance that must normally exist between the autonomous and the sympathetic nervous system in order that the somatic processes of life may be properly carried out.

Therapeutically, little has been gained so far, nor does the future promise very much, in my judgment, from the administration of gland products; at best this could be merely a substitution therapy, operative only so long as active substance is introduced; as the latter is destroyed or eliminated its effect ceases. Possibly grafting of deficient gland elements may be more effective when we learn to do this; just as good results are noted here and there from the removal of hypertrophied or hyperfunctionating glands.

32 North State Street.

REMARKS ON THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE PROSTATE AND VERUMONTANUM

JOHN R. CAULK, M.D.

ST. LOUIS, MO.

A consideration of the whole subject of prostatic diseases will be too comprehensive for the time allotted for this paper. My desire is to bring to your attention some of the principal maladies of this important organ with the hope of aiding you in appreciating some of the manifold symptoms which may emanate therefrom. The three particular diseases which we will discuss will be chronic prostatitis, prostatic hypertrophy and cancer of the prostate.

The important symptoms of chronic prostatitis are sexual, urinary and referred, the sexual and referred being the most frequent. The prostate being a sexual gland, one should naturally look to it in any form of sexual derangement, and generally one will find definite pathologic changes. Physicians are too prone to ascribe these sexual upsets to a mental condition of the patients and let the true cause pass unnoticed. Undoubtedly most of these patients are mentally unbalanced, but in my experience, it is usually a secondary factor. The prostate and verumontanum are as a rule at the bottom of the trouble, and it is very grati-

fying, indeed, to see the results we can obtain by systematic treatment to these organs.

The urinary symptoms of chronic prostatitis are much less frequent than the other two types. Most of the patients suffering with chronic prostatitis are troubled but little with urinary distress. However, there are quite a number who are subject to urinary symptoms, the most frequent of which are increased frequency of urination; pain at the beginning, during and at the end of urination; and slow, difficult and urgent urination. When these symptoms are present, they are generally due to a prostatic median bar in conjunction with a chronic prostatitis and posterior urethritis.

A survey of the literature shows but little mention of the verumontanum in these cases and I wish to call your attention to the great importance of this structure in the production of many such symptoms.

Frequently, symptoms of urinary obstruction and irritability find their cause almost entirely in the verumontanum, which is found large, swollen, tender and sometimes irregular and cystic. Treatment of the verumontanum through the endoscope, such as applications, removal of granulating areas, puncture and treatment of cysts, or whatever treatment seems indicated, will often restore the patient to his normal state.

As a result of the irritability of the verumontanum there occurs in many of these patients a vesical contracture due to the fact that the bladder has emptied itself so frequently that it has not subjected itself to its normal distention. This gradually takes care of itself after the cause of the irritability has been removed.

I could report any number of cases demonstrating these sexual and urinary manifestations, but will not take your time. The most important and most frequent group of symptoms having their origin in the prostate and verumontanum, is the referred group. Among the referred manifestations are pains in the small of the back (lumbago), pains over the sacro-iliac synchondroses, pains down the legs (sciatica), suprapubic, perineal and sacral pains, pain in the urethra, groins and testicles, occasionally pains simulating renal colic, various rectal sensations and herpes. I believe that the majority of such pains in men have their origin in the prostate and deep urethra. I have had patients who for years had been chronic invalids, some walking on crutches, others who had been in plaster casts and been treated by various forms of massage and fixation without benefit, rapidly improve and entirely recover after a systematic treatment to these offending organs. These particular symptoms of prostatic diseases have not received their proper attention and they are so frequent and so important that I trust you will bear the male pelvis in mind when such symptoms present themselves.

It is extremely important, especially in older men, not to disregard the prostate when such pains are present, particularly pains in the hips, as they are often indicative of a prostatic cancer and an early diagnosis is essential. Another interesting lesion often found in conjunction with deep urethral involvement is herpes. The two are very frequently associated and herpes is frequently benefited, if not cured, by treatment of

the deep urethra which is often responsible for it. I recall one patient in particular who had suffered for years with recurrent herpes and who for six months before I saw him had been compelled to wear a bandage around his penis in order to locomote with comfort. This patient had a severe deep urethral involvement, his whole urethra being studded with cysts and extremely engorged. After a course of treatment for this, he was greatly relieved and in a few weeks discarded his bandage, and now at the end of two years, has never had to wear it, although at times he has had an occasional crop of herpes. The prostate having such a rich nerve supply, it is very easy to conceive how disorders in and around it could give rise to such a multiplicity of symptoms.

One usually finds on examining the prostates of such patients various grades of prostatitis and periprostatis and seminal vesiculitis with lateral adhesions between the prostate, vesicles and pelvic wall. Indeed, frequently by rectal examination, one can tell the patient on which side his pain is located by feeling these changes without asking beforehand. A very important diagnostic point which one frequently can elicit is that pressure on the prostate or on the lateral adhesions often brings out or exaggerates the patient's pain. This point I have never seen mentioned before. The prostatic secretion almost always contains pus cells in varying amounts microscopically, and a microscopic examination should always be made, as frequently the prostate may contain a great deal of pus and still feel practically normal by rectal touch. One should not say a prostate is normal until he has examined the expressed secretion, as a little pus may go a long way in causing trouble in such a highly sensitive locality. The changes in the verumontanum in such cases are much the same as described above, and often this structure is the seat of trouble without much change in the prostate.

The utriculus masculinus is occasionally the focus from which the symptoms spring. Endoscopically in some of these cases one sees the orifice of the utricle, irregular, congested and swollen, and on aspiration, pus may be secured which has been retained owing to the obstructed orifice. In such instances, one has to dilate the orifice, aspirate the contents and treat the utricle by mild injections through special syringes made for such endoscopic injections.

One of the most frequent and most annoying symptoms of chronic prostatitis is the chronic discharge, which may amount to anything from a morning drop to a profuse discharge, resembling gonorrhea. A great many patients whom I have treated in the last few years have come to me thinking they had a gonorrheal infection on account of the discharge, which proved to be secondary to a chronic prostatitis, seminal vesiculitis and posterior urethritis. Such cases receive but temporary benefit from irrigations and injections and indeed, such treatment should not be employed as a curative measure. It is only after ridding the prostate and vesicles of their purulent contents by routine massage, dilatations and topical applications to the deep urethra that these discharges can be cured.

The next important prostatic disease which we will mention is prostatic cancer. In recent years, we have realized that cancer of the prostate is much more frequent than we had supposed previously and the more comprehensive statistics to-day show that the proportions of prostatic cancer to prostatic hypertrophy is one to four or five. This alone should make one always on his guard in examining a patient for prostatic obstruction, particularly if the patient complains of pains in the hips and legs. Any hard nodule in a prostate of a man beyond middle life, particularly if there has been no previous history of a chronic inflammatory lesion, can almost always be considered malignant. If the profession would carefully examine patients presenting prostatic symptoms and secure more patients with early lesions, before extension had taken place along the ejaculatory ducts and up between the fascia of DeNonviellier with involvement of the seminal vesicles, our statistics in the handling of prostatic cancer could be greatly improved.

The method of dealing with prostatic cancer depends entirely on the amount of involvement. If it is early, before extension has taken place, complete removal is possible. If late, after complete eradication of the disease is out of the question, the treatment will depend on the patient's condition. If he is voiding without much difficulty, the best plan is to leave him alone. If urinary distress is marked owing to greatly increased frequency, difficulty, pain and tenesmus, he may either be given a catheter or it is better to have the obstruction around the vesical orifice removed by a conservative perincal prostatectomy as in a benign case. The results in this procedure have been very satisfactory. The tissues after the enucleation heal as rapidly as a benign case and the early results are just as good. The patient, of course, is not cured of his cancer, but is relieved of his discomfort and I know of a number of cases living and well from four to eight years after such removal.

The most important prostatic disease and the one to which a great majority of old men come to, is prostatic hypertrophy. The symptoms of this disease are familiar to all and will not be described in detail, except to say that they represent increasing signs of obstruction to urination. It is this particular phase of the prostatic disease to which I wish to direct your attention, as there are so many of these old men who are allowed to go on and suffer or be subject to a catheter life, who could be easily cured and restored to normal urination. The idea seems prevalent, not only among the laity, but among some of the profession, that prostatectomy is a "knock-out drop" with a mortality very high. Such is probably the case among those who are not giving the proper attention to the surgery of this gland and are not aware of the many problems in dealing with it. There is probably no operation in surgery which has given better results in skilful hands than prostatectomy in recent years. It is an operation that requires great attention to detail and a careful knowledge of when to operate. The improvement in operative results recently has been due to several factors. First, to a more careful diagnosis not only of the local condition, but all existing complications; secondly, to proper preliminary treatment, getting the patients ready for

operation; thirdly, improvement in operative technic, and lastly, post-operative care. In the question of diagnosis, after one has determined by rectal palpation that a patient is a subject of prostatic hypertrophy, his next step is to determine by the catheter the amount of obstruction the patient is suffering, evidenced by the residual urine. Next he should have a careful cystoscopic examination in order to determine the exact nature of the obstruction and the complications, such as stones, tumors, diverticulae, etc., in order that one may know beforehand exactly what he is to meet at operation. Besides this local examination, there should be a careful physical survey, noting the condition of the heart, lungs and renal conditions. The most important of these in such cases is the renal condition, and it is this that has been responsible for the most of the deaths following prostatectomy. After there has been a prolonged obstruction at the vesical neck, there is gradually dilatation of the bladder, ureters and renal pelves and pressure atrophy of the renal cortex, causing various grades of hydronephrosis, and if infection supervenes, pyonephrosis or pyelonephritis. The kidneys of such patients are working under pressure due to this obstruction. If this pressure is suddenly removed, as by a prostatectomy, the kidneys are forced to work under relaxed pressure, the whole condition of affairs is altered and they frequently reflexly shut down, the patients becoming uremic, many to die. This is the one important point in prostatic surgery that has been recognized, and the institution of preliminary treatment to gradually relax this pressure and get the kidneys secreting under more normal conditions and not to remove the obstruction immediately, has put prostatectomy in the realms of safety and made it an operation with a very low mortality. The other factors in the preliminary treatment are drainage, careful attention to the bowels, free flushing with water and building up the patient physically.

An important measure in determining a renal condition of such patients and enabling us to determine when they are functioning properly and capable of standing an operation, has been phenolsulphonephthalein. In a series of several hundred cases, its results have been very satisfactory and it has been of untold service. You are probably all familiar with the drug and I will not take the time to describe it. This preliminary drainage and building up is without doubt the most important factor in handling prostatic obstruction. Never operate with a full bladder with the kidneys working under pressure, as uremia from suppression will almost surely follow, but gradually drain and relax as above described and you will find post-operative uremia exceedingly rare.

Just recently I did four prostatectomies, all in men aged over 70, three of whom were exceedingly uremic before operation and two were unconscious for a week. They all had high residual urine ranging from 500 c.c. to a liter and were all in a critical condition. They were drained and treated in the preliminary manner above described until they were clear of their uremia. They all stood prostatectomy well and in none of them was there the slightest reaction after operation and all got entirely well. Had any one of these been operated on immediately, I am sure

they would have died within twenty-four hours. I should urge you, however, not to allow your patients to go until this stage of broken compensation, but have them operated on earlier, before the deleterious effects of obstruction become manifest.

As to the method of dealing with prostatic obstruction, I am frank to say that I prefer the perineal method, as the results in over 300 cases (while associated with Young and my own) which I have had dealings with, have been so satisfactory that I naturally lean toward it. The suprapubic operation is a good operation and better for one to do who does not understand the proper perineal method; but if one does carefully the method of Young, which can be done in a very short time, not over twenty minutes, and preserves the ejaculatory bridge and the urethra, I am sure his results will be extremely satisfactory. These patients can be gotten out of bed on the second day and in a few days get interval urination, can regain their strength much quicker than the suprapubic method, and the late results are in my mind, far superior. The reason the perineal method has not met with general approval, is because so few men do it properly. There is no doubt that it requires special instruments and special training, but with these and a careful knowledge of the perineal anatomy, the results following its use are excellent.

The two most frequent bugbears have been incontinence and recto-urethral fistula. These are generally the fault of the surgeon and not of the operation. I have never seen a persistent rectal urethral fistula and only one case of partial late incontinence in the series of over 300 cases mentioned above. The mortality of this operation should not exceed 3 or 4 per cent. The post-operative care, whatever the operation, consists in flushing with water, careful attention to the bowels and the skin, and getting the patient up as soon as possible. After the perineal method is done, tubes and gauze should be removed on the second day, with careful nursing and attention to the wound.

So frequently we hear patients say that their age is against them. As a matter of fact, the age within reasonable limits, does not make so much difference, if the patients are built up and preliminarily treated to get their kidneys (which is the most important factor) in good functional activity before operation.

I have refrained from mentioning catheter life in the treatment of prostatic obstruction, as I think it is not justified, except as a preliminary measure to prostatectomy. The mortality with the catheter has doubled and the patient is constantly worried by its presence and is bound to succumb to infection sooner or later.

In case there is only a median bar obstruction or contracture of the neck, so-called, without involvement of the lateral lobes, then a median bar excision through the urethra with an endoscopic excision or the operation of Chetwood will suffice.

The important points in dealing with prostatic obstruction are: Have men patients operated on earlier; do not subject them to the catheter; never operate in the presence of a high residuum; institute preliminary drainage, flush with water and get patients' kidneys working under

relaxation; make careful rectal and cystoscopic examinations in order to know the exact nature of affairs and provide for careful nursing and attention after operation. With such measures I am confident that post-operative uremia will be rare and that the operative results following prostatectomy will be excellent, attended with an extremely low mortality.

CONTRACT PRACTICE IN ENGLAND UNDER THE INSURANCE ACT

C. MARTIN WOOD, M.D.
DECATUR, ILL.

To physicians in this country, accustomed as we are to the freedom of private practice and within limitations to making our own fees, the present situation in England seems almost unbelievable. In few words the British government announces that on Jan. 1, 1913, all working people earning under a certain wage (about \$10 a week) will pay a certain percentage of their wages to the state, which in return will furnish them with medical services for themselves and families. To the physician it announced originally that it would pay him \$1.50 per capita per year for giving medical attention to these people.

The only way we can understand the conditions that now confront the profession in England is by a study of English legislation of recent years and a little history of contract practice in England before the insurance act. To begin with, we must realize that the trend of legislation in Germany and England has been decidedly socialistic and paternal. They already have old-age pensions, pensions for the unemployed will soon be a fact, and others are on the way.

The entering wedge, however, for the present condition of affairs was made by the physicians themselves through permitting their own exploitation by the so-called friendly societies. I have been interested in this subject for several years, and some notes made more than three years ago will be interesting in view of present events. The friendly societies are quite similar to the fraternal societies, such as Owls and Eagles, in this country. In England only about one-fourth of the population comes under private practice; one-fourth is taken care of by the friendly societies, one-fourth by the "works doctor," and one-fourth by charitable organizations. These notes are on a conference between representatives of the friendly societies and members of the medical profession. You will note that even at that time the friendly societies were quite independent and dictatorial to the physician.

One of the chief advantages of such societies has been furnishing medical attendance for the members and their families, such service being given by the lodge doctor or society physician. Multiplication of societies with resulting rivalry, competition among physicians for such appointments and the necessity for reducing society operating expenses to the lowest point have all combined to reduce the compensation paid

for such services to an absurdly small figure. Dr. Thomas Pearse reviewed the facts from a large mass of statistics from 1,641 clubs and found that 76.5 per cent. paid less than \$1.25 per annum, while 23.5 per cent. paid more than this amount. For this sum the physician must attend members who are ill and also furnish drugs and surgical dressings.

As to the amount of work done the annual report of Manchester Unity of Odd Fellows, comprising over 600,000 members engaged in all varieties of occupation, showed that in five years, from 1893 to 1897, there had been an annual average period of sickness per member of 2.34 weeks. Consequently a lodge of 100 members would experience during each year 234 weeks of sickness for attendance of which the society physician would receive \$125. This would be equivalent to attending one man 234 weeks or four years and six and one-half months for \$125. This amounts to 53 cents per week or $7\frac{1}{2}$ cents per call. These figures are particularly interesting, in view of the argument frequently made by lodges that the physician receives so much per capita from the well members as well as from the sick.

Dr. Pearse concludes that such compensation is utterly unjust to a man who has spent years in preparation and study. Another injustice is that members join a fraternal order in early life when their wages are small and often become well off later, but continue to get benefit from their lodge membership. A case is cited by the *Lancet* of a manufacturer of a district who paid \$3,000 a week in wages, was wealthy enough to keep a stable of horses for hunting and who left at his death \$50,000 and yet was attended in his last illness by a lodge doctor who received only \$1 a year for his services.

The discussion further shows that the great weakness of the British physician in opposing this system which is grinding them down to less than mechanics wages is their lack of organization. They have no authoritative body to treat with the friendly societies or power to demand better conditions.

Such was the condition when the insurance act was passed and we can see that it was not such a big step after all for the large majority of physicians were already bound hand and foot by the friendly societies. The National Insurance Act put through by Chancellor Lloyd George is the biggest piece of social legislation ever promulgated in any country and contains many provisions which we cannot go into here, but, of course, that clause providing compulsory insurance against sickness and accident by the working classes is what interests us the most. Under the provisions of the act the employer pays one-third, the workman one-third and the state one-third the cost of administering the act.

The physicians immediately rebelled against the provisions of the act and rapidly began to organize the opposition by joining the British Medical Association. They could see as we can that the coming of the act is inevitable, so they are fighting to get the most favorable terms they can. To show the sincerity of the physicians in their fight 23,000 resignations from contract practice by 6,042 physicians have been sent to the British Medical Association to be used if necessary. Meetings between

the government and a committee of the medical association have been frequent and stormy, and the end is not yet. Many concessions have already been granted the physicians and they have formulated six provisions setting forth their demands. Probably four of these will be granted. The capitation fee has been raised from \$1.25 to \$2.25 and some extras will be granted. The friendly societies offered the government to take the \$1.25 per capita and work the act in their district but this was not accepted. It is doubtful now whether they could do this as the physicians are so well organized they could refuse to agree to it.

The instructions to the physicians for working the act are that they shall give such treatment as can in the best interest of the patient be undertaken by a practitioner of ordinary skill except confinements and tuberculosis. For the latter special provision including sanitariums will be made. When the condition of the patient is such as to require a specialist's attention he shall be instructed what steps to take in order to get this treatment. The physician shall be required to attend patients within three miles of his residence. He shall also attend and treat patients at a specified time and place. He shall order in a form provided for the purpose, such drugs and appliances as are required for the patient other than those he is supposed to provide. All treatments shall be given by the physician personally except when he is prevented from doing so by urgency of other professional duties; absence from home, etc. He will provide that when he is so detained some other physician will act as his deputy.

Persons to benefit from the act must obey the instructions of the physician and not conduct themselves in a manner to retard recovery. Whenever their condition permits they must apply at the physician's residence or office at hours he appoints. They shall not summon the physician between certain hours (to be fixed) except on emergency. When requiring to be visited at home they must summon the physician before a certain hour.

The chancellor seems to be very fair in his attitude toward the profession as he says he realizes it cannot be worked satisfactorily unless the members of the profession are in sympathy with it.

The outcome of the present controversy and the working of the act will be watched with a great deal of interest in this country.

432 South Union Street.

SOME SEXUAL DISORDERS IN THE MALE: "IMPOTENCY AND INVOLUNTARY SEMINAL EMISSIONS" *

ALBERT E. MOWRY, M.D.
CHICAGO

There appear to be two elements in the male that overshadows all the rest, viz: to sustain life and to reproduce it. Both problems should be looked after by our profession. The first has been industriously and care-

* Read before the Englewood Branch of the Chicago Medical Society, Oct. 1, 1912.

fully performed. Problems relating to the second have to a very great extent been cast to the four winds to be gathered by so-called "world renowned specialists," who, when simmered down, as a rule, show no special learning in any direction, excepting that of fleecing the unfortunate of his hard earned savings in lump sums giving him, as a rule, nothing in return but buncombe and a bad taste of the profession at large.

Physicians will see one of these famous people arrive in town and during short hours, with no night calls or late meals, collect more money in a day than he could earn in a week staying up nights on obstetrical and other cases, losing sleep and meals, and shortening his life by such irregular mode of living. He notes these things until his blood almost boils, but he should go a little deeper in his analysis and he would possibly discover that these unfortunate facts might have been otherwise if he had taken hold of these cases of sexual disorders in males and treated them as if they were cases and not passed them along as a joke, so to speak. Without these cases of sexual disorders in males to treat, our friends the "world renowned restorers" would be very scarce.

Regarding nocturnal emissions: I am a dyed-in-the-wool believer that these are unnatural and when frequent are pathologic, doing much damage to the economy and causing a sensation of weakness and lassitude that is not imaginary. There is a pronounced complaint that comes from some of these boys who have excessive nocturnal emissions that is occasionally overlooked. When walking, sitting, standing, eating, or very often just as they are going to sleep, there is a sudden peculiar feeling comes over them and a scene half realistic runs through their minds. The feelings that accompany these aura are terrible in the extreme. They are not unlike the *petit mal* of epileptic seizures. These spells will repeat for several days and suddenly disappear only to return at some future date. A young man goes to a church lecture "For Young Men Only," and is imbued with the idea that night losses occasionally are a part of the penalty for being born with testicles and are not to be wondered at. Presently, after having two in one night and two the next, he gets up feeling as if the proverbial steam roller had been his way. He then glances at papers and notices a spring among the palm trees. He is willing to do almost anything to escape the depression and so wends his way with most of his earthly belongings to the shrine of the man who claims to relieve and keep everything absolutely confidential. Do not think the class of boys that call to see these marvelous healers are always under par mentally. Many of them are bright and promising. I have known medical students to call on these people. I saw a medical student two days ago who had had three emissions the night before. He was ready to see Doctor Dowie's ghost if relief were forthcoming. These advertisers announce themselves in bold type with a bountiful menu of symptomology and prognosis, but as a rule with a woeful shortage in treatment, with the exception of the aforesaid buncombe.

In most cases the young man in trouble will consult a local physician first. What is the usual result? A bottle of bromids in some form which will do little except irritate the stomach and make the patient feel a new

symptom. We should realize that we have a case that really demands treatment and a proper analysis of conditions.

Show me a lawyer who does not dread a nocturnal emission on the night preceding an appeal where his mental and physical forces must be at their best; or a pugilist who does not fear such a drain the night before a combat? I believe in medicine there is too little attention paid to every-day conditions. Water kills more soldiers than bullets; so do nocturnal emissions in reality cause more real damage than ordinarily supposed. About nine interns out of ten leaving the hospitals and going out to relieve the physical condition of the race have their minds working overtime on how to do abdominal surgery as well as the next fellow, and forgetting that we have nocturnal emissions to treat sometimes.

We do not notice our animal friends having nocturnal emissions, so far as I am aware. They have semen and seminal vesicles. Some of the strongest young men, physically, I have ever met practically do not know of a seminal emission in their lives. Some of the weakest I know of have had them too frequently.

Why mince matters? These losses are deleterious and we should put forth every effort to check or stop them. This cannot be accomplished without effort on the part of all concerned.

First of all, what in reality causes these losses? The main cause is a congestive condition in the deep urethra, more especially the verumontanum and utricle. It might surprise you to take a look at a normal deep urethra and then look at one in a case where nocturnal emissions are frequent. By the use of the deep urethroscope recently devised, these parts can be seen and studied with an accuracy previously impossible. I prefer an instrument made along lines suggested by Buerger, of New York. I will show you some photographs of the distorted verumontanum that will demonstrate about as many and varied pathologic changes as you can find in tonsils.

Hawkins, of Pittsburgh, at a meeting of the American Urological Society, 1911, says: "If we can gain more knowledge of the verumontanum there will be fewer suicides." I fully coincide with his attitude.

That these hyperemias may be caused directly by some irritant in the urine due to faulty metabolism has been suggested.

Gonorrhea in the posterior urethra has a decidedly direct irritating effect, and I have in no wise changed my treatment of this condition, viz: one teaspoonful of quinin bisulphate to two quarts of water as warm as patient can comfortably tolerate; hang syringe or other container about seven feet from the floor; take the ordinary urethral tip, get the air all out of the tube and use the fingers as a stop-cock; insert the tip into the meatus and tell the patient to relax the muscles in the same way as he would urinate. In a few seconds a purring sensation along the shaft of penis will tell you the stream is going back through the deep urethra into the bladder. You can tell by instinct when the bladder has about enough and at that point pull out the tip and ask the patient to urinate. Repeat this several times. Do not hold the tip in the urethra until the patient gives a sudden contraction of the bladder muscles himself, for after that

he may not empty the bladder as promptly as he should, and our technic is not as pleasing as it would have been. This old Janet method using bisulphate instead of permanganate is wonderfully successful in the treatment of cystitis and deep urethritis.

One reason why so many cases of gonorrheal discharge persist in spite of treatment is the fact that the injections ordinarily given only reach the anterior urethra, while in fact, nine out of ten cases of chronic urethritis are posterior urethral and demand the above treatment in addition to the proper passage of sounds.

Do not irrigate the patient in the recumbent position with pan between legs, as you cannot do it right. Have patient stand up with bowl in front of him so you can sit down and do it right. Occasionally at the first treatment the patient complains of dizziness which is in no way serious.

Seminal vesiculitis and prostatitis must be managed by Fuller's operation, massage and other methods. I am told tuberculosis of the deep urethra and adnexa is very prolific in causing nocturnal emissions.

So much for direct causes. Indirect causes and reflexes are responsible ten times where direct causes are responsible once. What are indirect causes? First and foremost the brain sends a chain of thoughts, so to speak, down into the nerve centers about the deep urethra causing all kinds of congestion and trouble.

What must we do to lessen bad conditions so produced and to prevent them? Tell the boy he must meet the condition face to face and not try to sidestep. When a sensual thought enters his head, simply clench his fists and say: "Get Thee behind me Satan, I am master of myself." He must put the matter emphatic and fight it with as much grit as he would fight a real fight in the ring. This one maneuver is worth more than all others put together in fighting this evil.

A boy goes to bed and as he becomes quiet a sensual thought enters his mind and ordinarily in a few minutes he feels a peculiar sensation in his penis. This may not be a sensual thought, but simply a thought that he must not think a sensual thought, but this thought brings the same result, viz: peculiar damp feeling at the end of the penis. The end results of these thoughts on going to sleep are too often the cause of seminal emissions during the night or early in the morning.

I have seen a case of this type cured in one night. The boy would jump out of bed at the first intimation of thoughts and beat the wall with his fists and say: "Back to the green timbers you dirty thoughts"; then if he got into bed again and thoughts came again, he would jump right up and go for the wall again. Finally, as mind can rule, he went to sleep without any cross in his wires and his battle won.

A little will power is worse than none in these cases for a little thought: "Oh, I mustn't think of these things" will do damage—a terrible explosion, "I won't think of these cursed things" will help him win a cure.

This same type of condition can be seen in a child. A mother says: "Johnnie, there is no good place to urinate near, so don't ask Mamma," will be answered in about four minutes by the simple request: "Ma, I want to pe"; but if the same mother looks the child squarely in the eye and

says: "If you say pe I am going to whip you right," and the child knows mother's word to be good the child will suddenly forget waterworks.

This proposition we must impress strongest as it is where we succeed.

A well defined diet must be ordered and a light supper eaten leisurely. The bowels must be regular. I require the patient to sit on the stool after breakfast, taking little sips of water and a very slight straining. This will usually do the work. If I use a laxative, it is senna tea.

Prevent distension of bladder, and this is absolutely important. These emissions occur practically always in the early morning and are due to the distended bladder pressing the already irritated deep urethra causing an explosion. In rather severe cases I prohibit drinking any fluid of any kind after supper until next morning, and in all cases I demand that the patients urinate just as they jump into bed. In obstinate cases I have an alarm clock wake the patient at 3:00 a. m., and require him to urinate. I always have the patient sleep on his side or abdomen for manifest reasons, and in case the patient finds this hard to accomplish, tie a large turkish towel about his body with a large, hard knot in back.

Pruritis ani is another reflex disturber. No medicine for this, as there is but one cure, and that is to take a soft towel each day, wet one end and thoroughly cleanse the anus and then thoroughly dry with dry part of towel; then in a stooping posture put a piece of folded plain gauze, 4 by 2 inches, well into the folds of the anus. When the patient arises, it will remain in place and relieve every symptom by absorbing the secretions and keeping the two surfaces separate. This should be repeated each day just after stool.

Smegma about the glans and prepuce, which is very irritating, can be easily overcome by retracting the foreskin each morning, and with good lather cleanse it thoroughly and then rinse off soap and pull skin down in place. Be sure it comes down in place for a skin partly retracted causes an uncomfortable feeling. A careful circumcision is much preferable, and I follow the dissecting method as practiced by Lespinasse, or a dorsal slit, which answers the purpose splendidly.

Masturbation in my opinion is a very much overestimated condition, and nine out of ten cases of nocturnal emissions are due to other causes, and in some cases of masturbation the cause is irritation in the deep urethra caused by other things, and masturbation is only a result. I take but little stock in the so-called self-abuse theory, as the cause of nocturnal emissions. I have seen hundreds of patients with nocturnal emissions who never masturbated.

Irritation due to venereal diseases is a factor. To prevent these, immediately after coitus have the patient wash all parts carefully with some soap that lathers well and is non-irritating (I usually suggest Grandpa's tar soap); then rinse all suds off and put penis in a solution of diluted alcohol for five minutes. I have them pour about one-eighth glassful of alcohol and three-fourths full warm water; then put the penis in glass with foreskin gently but fully retracted. A most excellent idea, and one usually handy, is to put the penis into a glass of whiskey for three or four minutes.

Another precaution I always insist on is for the patient to always urinate just after coitus and if he has foreskin enough to cover the glands, to pull the foreskin well down and balloon it up several times while urinating. I believe if the above technic were carried out carefully after each sexual act venereal diseases would be very scarce.

And right at this point let me make it plain that the problem of ridding the race of venereal diseases lies in our teaching every man to wash and sterilize his penis after each act of coitus. We would teach boys that the straight and narrow path is always best, but if they do sidestep this path (which unhappily some always have and probably always will) they must never have illicit intercourse unless the aforesaid soap and warm water and diluted alcohol are available. Insist on this one fact and you have made a great stride and prevent untold suffering.

Possibly out of line and still applicable, have prostitutes dissolve one teaspoonful of bisulphate of quinin to a glassful of hot water and pour into two quarts of warm water and douche, preferably lying on back ballooning up vagina by holding vulva and then allowing escape of fluid. Repeat this until fountain syringe is empty. This process will be of great benefit in preventing disease. The quinin leaves the membranes soft and velvety in counter distinction to effect of lysol and bichlorid douches, which harden the membranes causing erosions and tears to penis which may result in syphilitic or other undesirable conditions.

One badly mistaken idea is that a certificate signed by a medical man in the hands of a prostitute means absolute safety. How many boys have presented themselves to me with acute gonorrhea telling me that it surely wasn't the "Clap," as the doctor had just examined the girl and issued a certificate. Some clergymen send men and women to physicians for examination previous to marriage in order to be sure they have no gonorrhea or to be sure an old case is completely cured.

At the present time no physician can be absolutely sure a man or a woman has been cured completely, for there are thousands of buried follicles about the cervix uteri and urethra and even the vagina may contain live gonococci that cannot be detected by any present method of diagnosis, and the same is true of the thousands of deep buried follicles surrounding the deep and anterior urethra in the male.

While I was Assistant Surgeon for the First Illinois Volunteer Cavalry during the Spanish-American War, I saw as many as ten cases of apparently acute gonorrhea present themselves at sick call after one of the hard marches where the horseback riding would irritate the deep urethra. The intense hot weather lowering the vitality was an accompanying factor. These men had two months before passed the rigid examination for United States army service with special stress laid on latent gonorrhea. At the time I speak of the discipline had been such that these men could not contract a new case.

In Prof. L. E. Schmidt's service at Northwestern University Medical School tests have been made daily for the past three months with different forms of vaccine to try and get proper media which will tell for a certainty whether a person is in possession of any live gonococci or not. Some

remarkable observations in a therapeutic and diagnostic way have been made, and it may be possible in the near future to make a certainty on gonorrheal diagnosis.

I do not want to be understood as belittling efforts of the clergymen in demanding health certificates, for I believe it a great step forward, but physicians should make their examinations as exhaustive as possible and should not be satisfied with a look at the penis, urine, or a glance at the vagina.

While I realize that the mercurial salves are of value in preventing diseases, I do not believe they are as reliable as the above procedure, for there is usually a lot of tenacious mucus on and about the glans that no salve will penetrate, and this mucus can only be obliterated by the plentiful use of soapsuds. Every house of assignation and open houses of prostitution should be required to have bowls with running water for the above purposes. There would be far less disease if these were installed.

There are other reflexes such as pediculi pubis, etc., but they are of minor importance and will be omitted.

The room for sleeping purposes should be extremely well ventilated. A most important fact is to have bedclothes as light as possible and still warm. For that purpose insist on feather comforts; they are expensive, but absolutely necessary in these cases; explain to the family that the boy is nervous and needs light but warm bedclothes.

As a rule, it is far better not to talk of the case to a soul except the boy to be treated. He will see that you get your fee, and consulting the father regarding the case is as a rule distasteful, as the boy wants no one to know of his troubles but himself. They are extremely sensitive on the matter as a rule.

And now we come to the real causes of most cases; mind impressions. These are obtained in many channels. Parents should judiciously watch the company boys associate with. One of the most dangerous types are men well along in years. They take especial delight telling boys lascivious stories, and these stories are gasoline on a small fire.

There should be a life term imprisonment for men who write and print such stories as "Only a Boy," and the like, and news agents and others who distribute them. This also applies to printing of lewd pictures. I have even had boys tell me that looking at pictures on bill boards caused various disturbances.

Theaters should be required by law to exclude boys under age from so-called leg shows. The better age limit would be 25.

Dances are bad, but possibly unavoidable. Tell the boys you are treating not to go. Alcohol and tobacco to be forbidden. No coffee for supper.

One present-day condition that is deplorable and wrong is the manner in which the average mother dresses her young daughter to look like a chorus girl or a doll. These tight skirts, showy slippers or shoes and fancy silk hosiery simply fan flames of licentiousness, and there are hundreds of girls in this town who would be virtuous, who are unfortunately otherwise, if fond mothers had dressed them sensibly. These

modes of dress cannot fail to cause passion gratified or ungratified in boys who associate with them. I cannot change fashions, but when we are advising boys tell them to pull the lever tight when about these makeups.

In this connection I might say I have made inquiry regarding boys at several military schools where good watch is kept, so no bad literature, pictures, stories and dolls are scarce. I find these boys exceedingly healthy, and are practically free as a rule from nocturnal emissions. Proper discipline is the keynote at these places. So much for causation and symptomatic treatment.

Now for medicinal treatment. Ordinarily I give quinin hydrobromate capsules, one to two grains each, after meals and at bedtime. I have copied a prescription suggested by Prof. A. R. Edwards, which I find excellent:

R—Citrate of potash,	25
Tincture chlorid of iron,	15
Tincture nux vomica,	10
Syrup of lemon,	q. s., ad 120
Sig. 4 c.c. in water before meals.	

As to medicinal treatment of the deep urethra; this is important. I take a tablet of quinin and urea hydrochlorid containing $1\frac{1}{8}$ grains and dissolve it in 2 drachms of warm water; then I fill the barrel of an Ultzman deep urethral syringe with the solution and inject it into the posterior urethra. The Ultzman syringe is far superior to rubber catheters for deep urethral work. I usually give the injection two or three times a week, having the patient urinate just before treatment. The anesthetic effect is decided and lasting. In bad cases I give treatments each day, preferably as late at night as possible.

Boys as a rule at this age and in this condition are anemic, and I sometimes give deep gluteal injections of iron or iron and arsenic. I inject contents of one of the vaporoles every two or three days.

IMPOTENCY

In this paper I am not attempting to cover the entire field of sexual neurosis, but the two conditions suggested above fall into the same category, viz.: in the one we anesthetize the deep urethra, more especially the verumontanum and utricle, so to speak, and in the other we stimulate the same parts.

Impotency may be divided into four groups, viz.:

The neurotic type. For example, a boy, aged 19 years, who is perfect sexually, but who fails at the last minute because he has a sense of fear that he may not be able to carry out his part of the contract. This is an exact duplicate of the man who comes into an office and is unable to urinate into a glass, even though his bladder is full. These neurotic cases eventually regain their composure and pass on blissfully. They need nothing but simply a little reassurance.

The second class are those due to intoxications, such as alcoholism, obesity, tobacco and the like. These must be treated by removal of causes so far as possible.

The third class are due to destructive conditions in the nerve trunks and centers, i. e., tabes and the like. Such cases are incurable.

The fourth class may be tersely described as due to gradual weakening of the sexual functions as years pass, i. e., senility.

I am going to take the liberty of adding a subdivision to this fourth class, and for convenience call it the pre-senility type. In other words, thousands of men aged 30 to 60 years, find powers of erection feeble at times or possibly at all times. These men are not old or worn out, but the sexual response becomes inactive and uncertain. These men become alarmed and their wives become suspicious. The druggist, the advertiser or the make-men tablets are appealed to and occasionally the family physician. A man hates to acknowledge that his powers have waned even to his medical adviser. How often have old men with one foot in the grave told me the story about being a little under par for camp meetings, but still good enough for ordinary home duties. But occasionally we are squarely consulted by men who desire help. There are many wonderful specifics and combinations said to produce an aphrodisiac action, and some of these do at times help a little, but, as with the emissions, we have a condition to treat and not a symptom.

Take the deep urethroscope and see what the verumontanum and utricle look like. There is usually a marked anemic appearance throughout the deep urethra; in fact, the whole generative system appears partly bloodless, including the penis itself. Can these cases be helped? Yes. Correct living conditions, cut out alcohol and tobacco, cut or obliterate any old stricture or other impediment, explain to patient that intercourse should be and must be less frequent as years go by, but that the testicles are still producing healthy spermatozoa and treatment will produce what he wants, viz., a good normal erection; and if he does not overdo the matter he will be good for occasional congress. I always advise patients with possibilities re-established to keep it up as abstinence for quite a period sometimes lessens desire.

What do I do to bring the real results? Take my Ultzman syringe with barrel full of a 2 per cent. solution of silver nitrate, lubricate the tube well with liquid vaselin and insert into and empty the contents into the deep urethra, with care always taken not to get any of the solution into the anterior urethra.

What are the results? Almost immediately an irritating feeling in the deep urethra and very often a strong erection of penis within a minute. Patients often have a desire to sit on stool and strain for half an hour after these treatments, but the burning gradually leaves and there is a feeling of new life that satisfies the patient immensely. The same action can occasionally be seen in a minor way in cases in the early morning when the distended bladder presses the deep urethra, and some patients will tell you of an erection in the early morning that passes almost immediately in urinating. I pass a sound on alternate days.

Why do I use 2 per cent. of silver solution? I have used 5 per cent., and even 10 per cent. solutions, but the action is too severe and causes desquamation. A 2 per cent. solution will, as a rule, produce no bad

results, and is strong enough to create the severe irritation we want. I repeat these injections every second or third day, and the patient will usually confide in me the fact that he had a good normal copulation after three or four such treatments. They get the habit re-established and often keep it going indefinitely. I give these cases two grains of quinin sulphate before meals, and iron, if indicated.

One thing must be borne in mind, and that is to examine every prostate before attempting this treatment, and an enlarged prostate is absolutely a contra-indication.

To use a silver solution in a case of this type sometimes causes urinary chills, which are sometimes severe, but so far as I am aware, not particularly dangerous. At this point I might suggest what possibly you have all noted, and that is the enlarging prostate in an elderly man pressing the verumontanum and utricule producing an irritation not unlike that produced by the silver solutions, causing sexual activity. These activities must always be borne in mind, for with an enfeebled mental condition and a renewed sexual activity we have a bad combination.

Within the past two weeks a woman, age 70 years, consulted me regarding her husband, aged 73, who she says has been docile for the past twelve years, but who has for some time had erections demanding gratification. She asked if this was a case of second youth, telling me she was too old a lady to enter into such frivolities, and asking if I couldn't make him behave.

It is these enlarging prostates irritating the deep urethra that cause old men to rape or attempt to rape little girls or to seek marriage with sixteen-year-old girls.

THE DIFFERENTIAL DIAGNOSIS OF GALL-BLADDER DISEASE *

ALLEN B. KANAUEL, M.D.
CHICAGO

The diseased states of the gall-bladder and its ducts present so many varied pictures that a differential diagnosis must of necessity cover almost the whole group of abdominal diseases. They begin with a low grade infection and lead up to either a suppurative inflammation with possible perforation on the one hand, or the formation of detritus or gall-stones on the other—each with its group of signs and symptoms—and end in sequelae which present an integral part of the symptom complex, so that every chronic or acute process in the abdomen may at some stage come into question.

A working basis for differentiation may be secured by dividing the subject arbitrarily into the successive stages just mentioned.

The low grade inflammation confined to the gall-bladder and its ducts presents the symptoms and signs of localized, non-spreading,

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walled-off infection to which are added the signs incident to involvement of adjacent organs by reflex pains or reflex paralytic ileus. Thus we must differentiate it from high retrocolic subacute appendicitis, pyelitis, syphilis of the liver, early duodenal or stomach ulcer, diaphragmatic pleurisy, abdominal angina.

The second stage — that of the passage of detritus or gall-stones — from the acute fulminating crises, as ulcer of the stomach and duodenum, passage of kidney stone, pancreatitis, appendicitis, gastric crises of tubes, abdominal angina.

The third stage — that of acute destructive inflammation or perforation — must be differentiated from all lesions giving similar peritonitic symptoms and signs, i. e., perforating ulcer of duodenum or stomach, pancreatitis, appendicitis, subdiaphragmatic abscess, pneumonia, intestinal obstruction.

The fourth stage — that of subacute inflammation with sequelae such as adhesions and stones in the ducts — from appendicitis (so-called dyspeptic appendicitis), pyloric or duodenal ulcer often with obstruction, hour-glass stomach, cancer of stomach, syphilis of liver, pernicious anemia.

It is manifest that with such an extensive group only the barest discussion is possible.

GROUP I.

In the first stage, that of mild infection with reflex symptoms and signs, we have more or less tenderness over the gall-bladder region. There is a voluntary rigidity of the rectus muscle, the mass of which may be mistaken for the gall-bladder itself by the unwary. If the patient's attention is distracted, however, the rigidity disappears and a moderately distended and distinctly tender gall-bladder may be felt. There is no vomiting, although there may be a lack of appetite. There is a sense of fullness about the upper abdomen with some epigastric pain. There is often a slight leukocytosis or it may be absent. The distress — it can hardly be called a severe pain — is more or less constant.

A full meal causes more or less distress due to two factors: first, the proximity of peristaltic waves of the stomach and duodenum moving a moderately inflamed gall-bladder; secondly, due to the partial paralysis of the pylorus incident to an adjacent inflammation. This partial paralysis gives rise to a moderate stasis of food and consequent gastric symptoms, chief of which is a distaste for food, and the presence of more or less gas and overloading of the stomach with contents. In other words, the patient feels that he has an indefinite "something" in his epigastric and right hypochondriac regions. Jaundice is seldom present. As the inflammation subsides, the signs and symptoms disappear to reappear at irregular intervals until the patient suffers more or less constantly. The general health of the patient apparently does not deteriorate, indeed, it is often an accompaniment of an increased adiposity incident to a less active life, which the patient may be leading. It is often accompanied

by a decreased activity of the bowels, due possibly to the same factor.

It is evident that a *subacutely inflamed appendix*, especially if it be *retrocoëlic*, will give rise to similar symptoms—but here the tenderness is slightly lower. The patient is often younger, and the attacks are generally more distinct, not so long drawn out, and the leukoeytosis and evidence of infection are more severe. There is likely to be more nausea or even vomiting ushering in the attack, which is more sudden in its onset than in the gall-bladder infection, which generally has more or less history of indefinite trouble before the pain becomes severe. The bowels are likely to be more constipated.

In *subacute appendicitis*, giving rise to the so-called appendicular gastralgia, tenderness over the gall-bladder region is likely to be absent. There is little or no rectus rigidity. It is true that here we have little or no tenderness over McBurney's point and all evidences of typical appendicitis may be absent, but we often have the history of attacks of appendicitis either of the well-known distinct type or of the more indefinite but still similar symptoms just described. Diagnosis here may be most difficult.

A *pyelitis* is often overlooked by the unguarded. Several such cases have been sent to me under the diagnosis of either appendicitis or gall-bladder disease. Examination showed tenderness as marked over the dorsal kidney region as in front, generally the temperature ranged higher with much variation, distinct leukoeytosis was present and an examination of the urine readily cleared up the diagnosis.

The *early ulcer of the stomach or duodenum* is characterized by more severe pains, is typically two or four hours after eating, is relieved by food instead of made worse. There is generally a hyperacidity, and alkalis completely relieve the pain. This history, with other signs of the condition which will be discussed later, clearly differentiates the condition if we are on our guard.

Abdominal angina is ordinarily the accompaniment of marked arteriosclerosis with the secondary symptoms in the heart and kidneys. There is an absence of tenderness over the gall-bladder and none of the evidences of inflammation. The attacks are irregular and have not the constant but indefinite distress of a gall-bladder disease. The patients are generally older. It is true that like gall-bladder disease, full feeding is apt to bring them on, but when they do appear the pains are sharp and generally completely relieved by emptying the stomach and administering vasodilators, after which the patient may be free from pain for an indefinite but distinct period, although it may be irregular as to time. There is generally a high blood-pressure, especially during the attack.

Syphilis of the liver is, as Edwards has shown, particularly difficult to differentiate from this type of gall-bladder disease. While it is not so common, yet one should always look for the stigmata of syphilis, and in case of doubt resort to a Wassermann test.

GROUPS II AND III.

The second and third groups enumerated above bring into consideration the acute fulminating diseases, each with the symptoms of preceding and subsequent disease and sequelæ. One of the most difficult of differentiation is doubtless ulcer of the stomach and duodenum.

The essential group of symptoms and signs in any of these abdominal crises centers about five: pain, nausea and vomiting, tenderness, abdominal rigidity and the rapid pulse, to which are added the history of the disease, the symptoms of the sequelæ, and signs peculiar to the individual disease. Let us consider these in order.

ACUTE FULMINATING DISEASE OF THE GALL-BLADDER
AND ITS DUCTS

Pain.—The pain is sudden in its onset, very severe, cutting and reaches the height of its severity very quickly after the onset. It bears no relation to the taking of food, continues an indefinite period of time and ceases suddenly, not to reappear for days or weeks. The pain begins in the epigastrium, but radiates widely. It is so severe as to be accompanied by free sweating and is only relieved by morphin.

Vomiting.—Nausea almost always accompanies an attack and we generally have vomiting, coming on shortly after the onset of pain. This may be repeated two or three times during the height of the pain.

Tenderness is not marked, although it is present, and the *rigidity* present is that of general spasm associated with the referred pain and not the localized rigidity characteristic of localized inflammation. If perforation takes place or severe inflammation of the gall-bladder occurs these then become most important evidences of disease.

The history of the disease is that of indefinite complaints above enumerated, to which have been added single attacks of pain similar to that just described, possibly accompanied by jaundice.

Sequelæ.—The signs and symptoms of sequelæ are those of perforation and peritonitis, general or localized, and those of involvement of adjacent organs, particularly the duodenum or pylorus with consequent evidences of the stasis of food.

Evidences of Disease Peculiar to the Organ.—These may show a jaundice, with clay-colored stools, if the stone lodges in the common duct. Hemorrhage is rare, and the stomach contents are normal on examination. Compare these symptoms with those seen in ulcer of the duodenum or stomach.

ULCER OF THE DUODENUM OR STOMACH

Pain.—The pain begins slowly, becomes severe in from fifteen minutes to a half hour; it is burning or gnawing in character, comes on characteristically two to four hours after food, and continues only a short time until food or alkalis neutralize the acid which relieve it entirely. The pain recurs constantly for a number of days or weeks, whenever the unneutralized acid is secreted and comes in contact with the ulcer. If the ulcer is large or complications are present, the pain may be constant.

Nausea and Vomiting.—While these may be present, particularly the former, they are not characteristic of the disease, although when vomiting does occur relief follows more quickly than in gall-stone attacks.

History.—The history is that of attacks of similar nature coming on at irregular intervals for a number of years, each attack lasting for some weeks. There may be a history of the vomiting of food. The general nutrition of the patient is frequently affected.

Signs and Symptoms of Sequelæ.—These are often marked and are particularly those of pyloric obstruction with a dilated stomach and the vomiting of large amounts of food. Gas formation is a prominent sign. If perforation occurs, the evidence of localized or spreading peritonitis develops.

The *evidences peculiar to the disease* are the characteristic pain above described with its possibility of relief and the finding of gross or occult blood in the vomitus or stools.

OTHER CONDITIONS TO BE DIFFERENTIATED

Pancreatitis is characterized by the presence of the five signs and symptoms I have described elsewhere as being characteristic of the surgical abdominal crises; namely, severe abdominal pain, nausea and vomiting, tenderness, rigidity and rapid pulse. The factors aiding in a diagnosis are that here the prostration is extreme and the pulse rate very high, often 130-140, and there is often blood in the stool. There may be a history of gall-bladder disease.

The passage of kidney stones is evidenced by the radiation of the pain along the ureter and down into the testicle, tenderness over the lumbar region and the finding of blood in the urine.

Appendicitis has its well-known localization near McBurney's point, with tenderness and rigidity, leukocytosis and temperature.

Tabs only needs to be thought of to be excluded. The loss of the knee jerk, the Argyll Robertson pupil, and other characteristic signs are easily found if sought for. Unfortunately, many patients suffering from gastric crises or tabs have been diagnosed thoughtlessly as suffering from gall-stone attacks, and we should always be on our guard.

Abdominal angina has been discussed above.

Where acute inflammation with or without perforation occurs in a gall-bladder, we have the tenderness of localized peritonitis engrafted on those of gall-bladder infection already mentioned, viz., localized tenderness and rigidity, leukocytosis and temperature, possibly with chills and fever, especially if the stone has lodged in the common duct. Besides the perforating ulcers, pancreatitis and appendicitis already mentioned, we must not forget to examine the lungs carefully for a pneumonia or a subdiaphragmatic abscess. The latter particularly should not be forgotten. One case that came under my notice, of appendicitis with subsequent pyelophlebitis and liver abscess, was wrongly diagnosed by the surgeon as a suppurative cholecystitis. A strangulated intestinal obstruction in the early hours may very easily be mistaken for an acute gall-bladder attack. However, the rapid development of abdominal distention accompanied by continued vomiting and the other characteristic signs, will soon clear the diagnosis.

GROUP IV.

The fourth group of conditions from which gall-bladder disease must be differentiated presents many difficulties, and the key to diagnosis lies largely in the history, since the complaint is made of the symptoms due to the sequelæ, and these may be similar from various diseases.

Here with a gall-bladder disease we may have the ball valve stone with its repeated chills and fever, accompanied by jaundice and a constant low grade infection with its attendant symptoms. Such a condition is generally easily diagnosed with study. But the low grade infection with attendant pyloric paralysis and more distinctly intestinal adhesions about the pylorus may be most difficult of diagnosis. Those cases presenting a gall-bladder tumor with adhesions about the pylorus most closely simulate carcinoma of the pylorus, since they present a sensitive mass with the evidences of pyloric obstruction; vomiting, dilatation of the stomach, retained food, and the loss of weight characteristic of carcinoma; and unless the history is clear an exploratory laparotomy may be necessary to differentiate them. It may be mentioned in passing that the *x*-ray pictures of bismuth in the stomach will at times serve to diagnose a carcinoma because of the mouse-eaten appearance of the picture. It should be emphasized, however, that at least four pictures must be taken in sequence and the findings be identical before one is justified in hazarding a probable diagnosis.

Another type of gall-bladder disease without tumor, but with adhesions, will so closely resemble in history and findings the pyloric obstruction incident to old ulcers, that a most careful study of the history as detailed above, will be the only determining factor in the diagnosis, and the same may be said of hour-glass stomach, although here a careful study of the washings from the stomach accompanied by *x*-ray pictures will generally serve to distinguish them when our attention is drawn to the possibility of the latter being present.

The most common mistake made is that of overlooking the so-called dyspeptic appendicitis, which, as has already been stated, may be present without localized evidences over the appendix. All of the symptoms may be referred to the stomach. Only the most careful study of the case, excluding any history of previous gall-bladder or stomach disease, will enable one to arrive at a probable diagnosis. One should note that the appendicitis lacks entirely the clean cut history of pain incident to gall-stone passage or ulcer — food always gives discomfort, gas is generally present in the small intestine, and enough catharsis gives temporary relief in a majority of cases, vomiting is generally absent, constipation is marked and a stomach analysis is normal.

Syphilis of the liver and pernicious anemia may also give rise to difficulties and will require careful blood-tests to eliminate them.

In conclusion one should urge that all chronic cases of indefinite stomach symptoms, persistent gastralgia, sour stomach, chronic stomach-ache, intractable dyspepsia, should be subjected to most careful laboratory and clinical examination before they are labeled as suffering from neurasthenia or hysteria.

POTT'S FRACTURE

E. M. BROWN, M.D.

CHICAGO

There is scarcely a fracture of the extremities in which inaccuracy of adjustment causes so much disability as that of Pott's fracture. Popularly and erroneously, this term is applied to other and various injuries in this locality. A true Pott's fracture, as originally described by Pott himself,¹ includes a fracture of the fibula two or three inches above its lower extremity, and a rupture of the internal lateral or deltoid ligament, with outward dislocation or luxation of the foot at the ankle joint. The deltoid ligament may fail to give way and the tip of the internal malleolus is then torn off.

A fracture somewhat similar to this in that it is a fracture dislocation at the ankle joint with outward displacement of the foot, but having in addition to the condition described by Pott rupture of the inferior, tibio-fibular ligaments, or the external lip of the tibial articulation to which they are attached, with rupture of the inferior interosseous ligament as well, was first described by and is known as Dupuytren's fracture. In Dupuytren's fracture the astragalus is displaced upward as well as outward. These two conditions constitute what is generally understood as Pott's fracture, and will be discussed together here. Some authors² speak of Dupuytren's fracture as that of both bones, tibia and fibula, close to and just above the ankle joint, with outward displacement of the foot.

Another condition which simulates and might be mistaken for Pott's fracture is separation of the epiphyses of the tibia and fibula, with outward displacement of the foot. To avoid the mistake it is only necessary to remember that such is possible and occurs in younger people.

The mechanism of Pott's fracture is somewhat as follows: The patient suddenly slips or falls with great force on the inner side of one foot. The foot is abducted or everted. The strain falls on the internal lateral ligament, which stretches somewhat, perhaps, allowing the astragalus to be forced outward. The force is now transmitted through the astragalus to the internal aspect of the lower extremity of the fibula, and thence up its shaft, which gives way, fracturing transversely or obliquely at its weakest point (Pott's line), about three inches above its tip. The internal lateral ligament now gives way, or, if it does not, the tip of the internal malleolus is torn off. The degree of outward luxation depends on the degree of force still acting. If this is great, the inferior tibio-fibular ligaments, or the inferior interosseous ligament, may be torn, the external lip of the articular surface of the tibia may be broken off and the astragalus displaced upward, constituting a Dupuytren's rather than a Pott's fracture. The external prominent edge or lip of the astragalus acts as a wedge which cleaves the bones apart as it is forced upward. The articular surface of the tibia rides forward to the notch on the anterior portion of the articular surface of the astragalus. The

1. Pott's Surgical Works, Sir James Earle, 1819, i, 246.

2. Urgent Surgery, Lejars, p. 440.

lower end of the tibia may be forced through the skin and a compound fracture dislocation result. The toes usually point downward and the heel is drawn up. Great swelling and extravasation of blood usually quickly follow the injury. There is great prominence of the internal malleolus, and of the end of the tibia anteriorly, which may be lessened much by the marked swelling. With the swelling, large blebs often form in the skin in the region of the malleoli. Extensive injury of the soft tissues, blood-vessels and nerves may endanger the vitality of the foot and gangrene threaten or ensue.

Diagnosis.—An accurate diagnosis of the extent and pathology of the injury, as well as a good knowledge of the anatomy of the parts, is necessary for intelligent treatment. If with these one has acutely in mind the cardinal signs and symptoms of fracture and dislocation, a mistake in diagnosis is scarcely possible. I think one should easily recognize the articular surface of the tibia and the prominent internal malleolus very readily. If the internal malleolus is torn off, the sharp edge of the tibia from which it is detached should be easily made out, and the loose fragment carried outward by the internal lateral ligament readily located, even when there is considerable swelling, such as is present in cases seen some time after the injury. If one will place the thumb of one hand on the external malleolus or head of the fibula and the fingers of the other hand over the point at which that bone is usually fractured, crepitus and increased mobility can be elicited when alternate pressure is made. When the inferior tibio-fibular or inferior interosseous ligament is torn, the greatly increased mobility of the lower fragment and with it the foot should be easily recognized. When this latter condition of the ligaments is present, there is usually great antero-posterior movement of the foot at the ankle joint, because in such cases the anterior ligament of the joint is also torn to some extent. Even without this there is considerable antero-posterior movement, because even with the tibio-fibular ligaments, especially the interosseous, intact, the lower end of the lower fragment of the fibula, and the upper end of the lower fragment may move forward or backward. There is always widening of the intermalleolar space. When in doubt as to the conditions after careful bimanual manipulations, the *x-ray* is usually available, and tells the tale better than anything else. Resort to the *x-ray* should be seldom or never necessary.

Treatment.—The indications for treatment are to return the parts to their normal relations and maintain them in that position until healing or union of the torn or fractured tissues is complete, guarding particularly against both anterior, posterior and lateral deformities.

Reduction.—For reduction anesthesia should always be employed. While Pott's fracture is usually easily reduced, especially in cases seen early, before swelling and extravasation of blood and serum have occurred, it is by no means always easy to bring the lower fragment of the fibula into normal relations with the shaft and the normal intermalleolar relation, even under anesthesia. The upper end of the fibula falls in toward the tibia and even forcible adduction of the foot sometimes fails to bring

it into line. Likewise, as pointed out by Murphy, the articular surface of the tibia becomes locked in the notch of the astragalus and requires over-extension of the foot combined with traction downward and flexion of the ankle to cause it to slide back into place. Without anesthesia this is not always easy. Murphy³ also emphasizes the point that the fracture should be reduced in the inverse order of its occurrence. The proper position of the foot and leg is of great assistance in reduction, as well as maintaining the parts in proper position after reduction. The knee should be flexed and the thigh above the knee firmly held by an assistant, while the operator firmly grasps the foot and heel, extends and adducts the foot. This position relaxes the gastrocnemius muscles which are attached to the femur, and are in a state of contraction and making an upward pull on the tendo-Achilles. While making extension and adduction, it is sometimes necessary to make more or less counter-pressure above the internal malleolus. If the fractured ends of the fibula do not readily come into line with extension and over-adduction of the foot, manipulation for the purpose of loosening up these ends, followed by forced over-adduction and firm pressure on the tip or lower end of the fibula, will usually bring them into normal relation. If this fails, a nail or screw may be driven into the lower head of the fibula, and extension and manipulation be made directly on the lower fragment itself. In most cases this will accomplish the desired result and we will have fulfilled the first indication, that is, restored the parts to their normal relation. Now, to maintain them so: First, position is again of great assistance. The knee should be flexed to an angle of 45 degrees at least, the foot flexed on the ankle to a right angle, or more, if possible, and then adducted. Preparatory to putting on splints, the foot can be held in this position by a stirrup, or, better, by an adhesive strap passed along the inner portion of the sole, over the first and second toes, and attached to the limb above the knee. This can be left in place until the dressing is complete, and then cut away. By this means the foot is held in the position desired as well as being a handle for support of the leg while applying the dressings. Of course, it is understood that the leg is thoroughly cleansed with alcohol or soap and water before applying any dressings.

Various splints have been recommended and used in Pott's fracture. Of these, Dupuytren's, either alone or in conjunction with a light plaster cast overlying, was used formerly to a considerable extent. There is no doubt that this splint, properly applied, is serviceable, but there is some doubt that it fulfills all the indications. It is true that it is seldom properly applied. The splint should extend well above the knee and four to six inches below the foot. It should be of the proper width, well padded, especially above the internal malleolus, and the straps at the lower end should not extend above the external malleolus, and when applied should hold the foot in over-adduction.

I think the greatest objection to this splint, with or without the plaster reenforcement, is that the foot is not held at right angles with

3. *Surgical Clinics*, p. 619.

the leg, but has rather a tendency to point downward, which allows the tibia to ride forward on the astragalus, as well as the fact that when the splint is removed the patient cannot put his weight on the foot, but rather on the toes, the heel not touching the ground. I believe there is some rotation inward of the astragalus on the tibial articulation also brought about. There are some splints with which this objection is overcome, notably Cabot's wire splint.

To my mind, plaster is the most desirable dressing for these cases. Plaster casts moulded laterally or posteriorly, or both, with a few turns circularly, and split later, the cast extending from the toes to and including the lower third of the thigh, can be made to fulfill the requirements most satisfactorily. Before applying the cast a cotton stocking devoid of any coloring matter should be pulled over the foot and leg. Over this light cotton padding may be applied, if deemed necessary, or cotton padding may be used without the stocking. Great quantities of cotton are not, as a rule, necessary. However, it should be used in sufficient quantity to protect the bony prominences and the heel, and to get counter-pressure where needed. If one wishes to support the heel to prevent the foot falling backward, an ordinary inflated rubber ring pessary covered with cloth or cotton may be employed to advantage.

Steel plates and silver wire may be used in some cases with advantage if one so desired, and has developed his technic to a degree of perfection that removes practically all danger of infection. One should see and study Lane's technic, if possible, before attempting work of this kind.

A Lane plate applied to the fractured fibula, the tibio-fibular ligament being intact, will nicely maintain the parts in normal relation without anything else in most cases. However, I think a light cast, the foot in over-adduction and flexion, should be used as well. Wire may be used in a similar manner, but will hardly be as efficient. I will mention later on the use of nails in the internal and external malleoli.

After-Treatment.—If the cast is split or a moulded cast is used, there is little danger from swelling, and it is always easy to inspect the limb. At the end of two or three weeks at most the leg should be removed from the cast. Gentle passive motion, flexion and extension only, never lateral, together with gentle massage, should be made and the cast replaced. This should be repeated at frequent intervals during the balance of the treatment. At the end of four or five weeks the cast should be removed and the ankle strapped as for flat-foot. This strapping should be continued for some weeks after the patient begins to walk. The arch of the foot should then also be supported by a metal pad under the instep for some months. He should not be allowed to walk before two months.

The pain, swelling and degree of stiffness following Pott's fracture increase with the extent of bruising and laceration of the soft tissues and with the age of the patient.

Where the injury is extensive and the patient is at or past middle life, pain, swelling and stiffness will persist long after healing is apparently quite complete.

Prognosis.—"The support of the body and the due and proper use and execution of the office of the ankle joint," observes Pott,⁴ "depend almost entirely on the perpendicular bearing of the tibia on the astragalus and on its firm connection and normal relation with the fibula." "If either of these be perverted or prevented, so that the tibia is forced from, or by lax ligaments or widened intermalleolar space be allowed to luxate from its just and perpendicular position on the astragalus," the functional integrity of the joint will surely suffer and disability and deformity surely result.

Causes of Disability and Deformity.—1. Ankylosis. Following Pott's fracture when the cast is removed, more or less restriction of motion at the ankle joint is found, especially if the cast is allowed to remain too long, if the foot is not dressed flexed on the ankle, if the patient is advanced in years, or if the injury to joint and soft parts has been extensive, and it takes considerable passive motion and use of the foot to entirely overcome this. If the foot is dressed at right angles, or better, the patient can at once stand flat on his foot and when encouraged to walk and use the member the restricted motion soon disappears. If the foot is dressed only in the slightest degree extended, the ball of the foot only meets the ground first; walking is difficult or out of the question, and the restricted motion and disability much prolonged.

2. Widening of the intermalleolar space is due either to failure to reduce or maintain the external malleolus in its normal relations, or to the same conditions as regards the tip of the internal malleolus. Sometimes the internal lateral ligament fails of perfect repair, and although all other parts have been brought and maintained in a normal position, a condition of flat-foot is practically unavoidable. When the tibio-fibular and interosseous ligaments are torn and the external malleolus is not easily held in position otherwise, I should not hesitate to use a small wire nail driven through the fibula into the tibia at the tibio-fibular articulation, avoiding its synovia, if possible. The same may be used in the tip of the internal malleolus.

3. Rotation of the astragalus on the tibial articulation was recognized by Hamilton⁵ as a frequent cause of disability following this and Dupuytren's fracture; hence one should use care to preserve the normal relation of the foot with the leg.

4. Posterior displacement of the foot is a cause of deformity and disability which can be avoided if at first the luxation is properly reduced and the foot is flexed to a little more than a right angle with the leg when dressed. If this does not suffice, then the heel should be supported, as indicated above.

5. Anterior displacement of the foot is less frequent than posterior, because the weight of the foot is usually sufficient to bring it into normal relations, unless unwisely or carelessly supported too much at the heel, or the limb supported entirely from the foot while applying the cast.

4. Loc. cit.

5. Fractures and Dislocations, p. 450.

6. Vicious Union. Osteotomy of one or both bones (tibia and fibula) has been done to correct deformities and disabilities resulting from vicious union following Pott's fracture, and with marked success. As the fibula is the bone usually at fault, its fractured ends having fallen in against the tibia and so united, operation on this bone is sufficient to correct the deformity in most cases. Strapping, as in flat-foot, will be perhaps necessary afterward to allow contraction of the overstretched internal lateral ligament in cases where the internal malleolus is not torn off.

COMPOUND POTT'S FRACTURE

A compound Pott's fracture presents definite dangers because of certain anatomic and physiologic peculiarities.

1. Because an open joint is less resistant to infection than other structures. It is even less resistant than the peritoneum.

2. The close proximity of numerous tendons and tendon sheaths renders infection in this region difficult to control when once it has gained entrance to these structures.

3. The important blood-vessels and nerves which are in near relation to the joint may be ruptured or injured and the vitality of the foot thereby endangered.

4. The older the patient, the greater the danger from any or all of the above factors.

Because of these dangers one is early confronted with serious problems in the treatment of such cases. It is most important to avoid infection, if possible. The experience of Murphy has shown that the former practice of extensive scrubbing and efforts at cleansing of all compound fractures increases rather than diminishes the danger of infection. However, any foreign material and gross dirt should be removed and the bruised, devitalized tags of tissue clipped off, the skin about the wound cleaned with ether and alcohol, and the wound itself including the joint cavity and exposed or protruding bones cleansed thoroughly with normal salt or boric acid solution. The brush should not be used at all. Lastly, the skin for some distance about should be painted with iodine. The soft tissues, but not the joint, may receive the same application, and the bones restored to their normal position, the wound closed and silkworm gut drainage inserted, so that the joint cavity is drained and the gut protrudes from angles of the wound. An abundant 5 per cent. carbolyzed gauze dressing should be applied to the wound and its immediate vicinity.

This fracture should be corrected and splinted just as a simple fracture, except that provision must be made for redressing. If infection occurs, it is difficult to control, and amputation may be necessary, in order to save the limb or life of the patient. The other conditions in which amputations must be considered are extensive laceration of the soft tissues, vessels and nerves, or comminution of bones and old age. In old age the indications for amputation from any of the causes given develop more rapidly than in the young.

Excision of the joint is sometimes called for in cases where there is great injury to the bones involved, and in cases where reduction is impossible. The latter should not be numerous or frequent.

Extreme conservatism should be the rule at least early in the treatment of compound Pott's fracture. However, it should not be carried beyond the point of safety to the limb or life of the patient.

It should be remembered that a stiff joint in a good position is much better than an artificial limb.

MENINGITIS IN INFANCY *

R. H. SMITH, M.D.

SEATON, ILL.

Meningitis occurs with sufficient frequency in infancy to be well worth our serious attention. About 75 per cent. of all cases of tubercular meningitis occurs before the fifth year, and more during the second year than any other time. Cerebrospinal meningitis is more common in childhood than any other time, and is especially common in infancy. When cerebrospinal meningitis is not epidemic at least about 70 per cent. of cases of meningitis in infancy are tubercular, and nearly all the others are meningococcal in origin. So for practical purposes we have only to consider the two varieties for differential diagnosis.

Since the advent of the Flexner serum it has made it absolutely necessary to make a positive diagnosis as by its use we are in a large majority of cases able to effect a cure if the case is correctly diagnosed early. If the disease is due to some other organism than the tubercle bacillus or meningococcus, the disease is more liable to resemble the cerebrospinal variety in character than the tubercular, and always follows in the wake of some other disease as pneumonia or la grippe. Usually when we have the signs of cerebral irritation during the course of another disease we consider them due to a complicating meningeal irritation rather than a complicating meningitis. The diagnosis between meningitis and cerebral irritation is usually easy when the fontanel is open. The fontanel is almost always bulging when meningitis is present. It is level or depressed when there is no meningitis, but occasionally we may have a meningitis with no bulging. When the fontanel is closed the diagnosis is much more difficult as the symptoms of meningeal irritation and meningitis may be exactly the same. The same rule, however, holds good that if the symptoms follow in the course of another disease they are due to a meningeal irritation rather than a complicating meningitis. If, however, the symptoms of meningeal irritation develop and careful physical examination including the ears shows no cause for the symptoms, the chances are that the disease is a meningitis. It must be remembered, however, that the symptomatology of meningitis in infancy is usually different from that in older children. The pulse and temperature are

* Read before the Mercer County Medical Society, Nov. 19, 1912.

usually increased rather than lowered. Vomiting is the most common symptom both early and late. Explosive vomiting almost never occurs; constipation the exception rather than the rule; pain very unusual; convulsions comparatively infrequent; Körnig sign inconstant; the kneejerks very variable, ankle clonus usually absent, and retraction of the abdominal muscles almost never present. It is almost certain that the disease is either tubercular or cerebrospinal. The differential diagnosis at this age is a very difficult one. The rules which apply to older children and adults do not apply at this age. The onset in tubercular meningitis in infancy is often acute while that of the cerebrospinal variety is often slow. The temperature course varies so much in both that the fever curve is of but little value. The symptomatology of the two conditions after the symptoms of meningeal irritation and increased pressure have developed, are practically the same. On the whole, however, the symptoms are a little increased in the cerebrospinal variety. The absence of family history exposure to tuberculosis does not count against tubercular meningitis, and again the history of tuberculosis in the family with the absence of an exposure to tuberculosis does not count in favor of tubercular meningitis. But the history of direct exposure to tuberculosis is very strong evidence that the case is one of tubercular meningitis.

The examination of the blood is of some value. We usually get a leukocytosis in the cerebrospinal variety, while there is usually no increase in the leukocyte count in the tubercular. However, in some cases this may be reversed. The tuberculin test is not of much value in these cases, however, a positive tubercular reaction at this age would count in favor of tubercular meningitis, while a negative tubercular reaction would not rule tubercular meningitis out as the reaction is often not present in the miliary variety to which tubercular meningitis of course belongs.

In the vast majority of cases a positive diagnosis can only be made by lumbar puncture. Lumbar punctures should be done in every case, because if it is a case of cerebrospinal meningitis it can be in many cases cured by the use of the serum, and because there is no danger in the operation if it is properly performed. Lumbar puncture is not a difficult operation in a baby. The baby should be placed on its side on a hard surface to prevent lateral flexion. The spine must then be flexed in the lumbar region by an assistant. When the spine is flexed the spaces between the lumbar spines are enlarged and the needle can be easily introduced. The needle is best introduced between the fourth and fifth lumbar spines; it should be pushed forward and a little upward; it is about $1\frac{1}{4}$ inches into the spinal canal. Care should be taken not to go in too far because of the danger of wounding the vessels on the anterior wall of the canal and causing bleeding. The mixture of blood makes it impossible to tell whether the fluid is turbid or not, and interferes to some extent with the microscopic examination of the fluid. There is no danger of hemorrhage into the canal as the bleeding stops as soon as the needle is withdrawn. A line between the crests of the ilia passes through the fourth lumbar spine. There is no danger of wounding the cord at

this age if the needle is passed between the third and fourth spines and probably none if put between the second and third spines.

Normal cerebrospinal fluid runs out slowly drop by drop, is perfectly clear like distilled water, does not deposit a fibrin clot on standing, usually contains a very few and never more than twenty cells to c.cm. most of which are small mononuclears and no organism. The normal fluid contains from .05 to 0.1 per cent. of albumin; that in tubercular meningitis as much as 3 per cent. of albumin and in cerebrospinal meningitis it may go as high as 0.6 per cent. It is at any rate always increased in meningitis, and this is an important point in differentiating between normal and abnormal fluid. Hemenway finds that globulin is always present in meningitis and very seldom in other conditions.

The cerebrospinal fluid in tubercular meningitis is usually under increased pressure and runs out in a stream or rapidly succeeding drops, is usually slightly turbid but may be perfectly clear. A fibrin clot is formed on standing and more than twenty cells to the c.cm., usually from 100 to 200, almost all mononuclears, but the polynuclears may run as high as 20 to 30 per cent. in some cases. If the fluid is examined carefully enough tubercle bacilli will be found in 90 per cent. of the cases. The fluid in the cerebrospinal variety is under increased pressure and usually runs out in a stream. It is turbid or purulent. Lucas in an analysis of 500 cases found perfectly clear fluid in three cases. It forms a fibrin clot on standing and contains a great many cells the majority of which are polynuclear in type; these gradually change to the mononuclear as the child improves.

The *Diplococcus intracellularis*, a Gram-negative biscuit-shaped diplococcus, is found in almost all cases, both within and without the cells. It is very necessary to make a smear and stain in every case because the fluid might be perfectly clear and resemble that of tubercular meningitis in every way, yet you would find the diplococcus on examining the slide. You can not only rely on the cell count for a diagnosis, the only positive diagnosis is to find the bug. Tubercle bacilli are very difficult to find, while fortunately the diplococci are comparatively easy to find, but if you look long enough you will be able to locate the trouble in every case.

Unfortunately, however, the fluid in poliomyelitis resembles that in tubercular meningitis, but a careful study of the clinical symptoms ought to make it very easy for us to make a diagnosis. The most striking thing about tubercular meningitis is the irregularity of the onset and early symptoms. No two cases are exactly alike. In some cases the onset is sudden, with very violent symptoms, while in others it is slow and insidious. It is, however, much more sudden than is ordinarily supposed.

I have selected a few cases from Dr. Morse's case book to illustrate the variability of the early symptoms of the disease.

A boy, aged 12 years, had been perfectly well up to February 22, when he vomited; the next day he was feverish and coughed a little. He began to be stupid and refused food on the 24th; he had no convulsion, spasm or rigidity. He was comatose when seen on the 26th; there was no rigidity of the neck. The anterior fontanel was slightly depressed, pupils much contracted, and he held his

arms and legs rigidly extended. The knee jerks were equal and lively. Kernig's sign was absent.

A boy, aged 27 months, had repeated attacks of recurrent vomiting. He began to be croupy on the 1st, and to vomit the 3d without known cause, and continued to vomit every little while until the 6th. The bowels had been a little constipated. He had coughed constantly. Physical examination always negative. He was somewhat restless but perfectly clear mentally. The physical examination showed no evidence whatever of meningeal irritation, so that a diagnosis of recurrent vomiting was made. Definite signs of meningeal irritation appeared on the 9th.

A case of my own, a little girl, aged 3 years, was seen on the 15th; complained of a little pain and vomiting, bowels constipated, temperature 100; no abdominal tenderness; physical examination negative. I saw her again on the 18th, she was still running a temperature and was feverish and cross; physical examination, negative; she gets tired very easily; did not vomit any this day. I saw her again on the 20th; she was just the same, vomited occasionally for no particular cause. I saw her again on the 22d, she looked pale and was stupid; some muscular rigidity present in the arms; loss of knee reflexes; pupils normal; a suggestion of a Kernig; persistent vomiting, temperature normal; pulse 90; bowels constipated; leukocyte count 5,000. I saw her again on the 23d; she was still drowsy and stupid. A well marked Kernig was present with muscular rigidity quite marked. A lumbar puncture was done, fluid was clear, came out under increased pressure; 220 cells to c.cm., mostly mononuclear; albumin 3 per cent. and a well developed spider web fibrin clot formed in standing; temperature 101, pulse 110. I saw her again the next day, she was brighter and would take notice of things, and her people thought she would get well. On the next day, the 25th, she was drowsy and stupid again; temperature 102, pulse 96. On the 26th she was comatose and was seen in consultation by Dr. Weinbigler, and a lumbar puncture was done. Fluid clear under increased pressure; cells 100 per c.mm.; 90 per cent. mononuclear, fibrin clot formed. Her temperature was 100; pulse 100; she gradually sank away until the 29th when she died. In this case I found the tubercle bacilli on examination of slide.

A boy, aged 3 years: I saw him in consultation on the 28th; sick two weeks; four days ago began to be drowsy, refused food and would take notice of nothing. Has been vomiting occasionally; temperature 99 to 100; slight increase in pulse; physical examination, negative. Baby's head is drawn to side, pupils normal; loss of knee jerks, also abdominal reflexes, neck sign absent, slight muscular twitchings with muscular resistance of muscles on right side. Kernig's sign absent. Lumbar puncture: fluid clear under increased pressure, cells 250 c.cm., albumin 1.5 per cent., fibrin clot found; no bacilli found, but in all probability a case of tubercular meningitis.

According to Morse no two of these cases look alike; the only symptom which is at all constant is the vomiting, and he says we should think of meningitis in every case where there is vomiting with no particular cause for it.

The course of tubercular meningitis in infancy is as a rule much shorter than usually is supposed, two weeks the average. Morse reports one case that died in thirty-six hours, diagnosis made by autopsy. Holt says that he has seen but two cases that lasted as long as five weeks.

Almost every one thinks of meningitis as a disease constantly associated with convulsions, rigidity, spasms, paralysis and retraction of the neck. Morse says that only a few are ever present in any one case, and it is not uncommon at all for the disease to run its course without convulsions or muscular rigidity, the condition being one of placidity with diminished or absent reflexes, and he describes a number of cases to illustrate his points.

Remission in symptoms is very rare in infancy; cases usually progress from bad to worse. The prognosis in tubercular meningitis is very bad. The percentage of recovery is so small that absolutely no hope of recovery should be held out. Treatment is only symptomatic. Urotropin should be given, also opium and the bromids as needed. Morse relies on lumbar puncture to relieve the symptoms by relieving pressure, it is only temporary but seems to give more relief than anything, and besides it is harmless.

In cerebrospinal meningitis we have all the varieties in infancy that we have in older children. All of us are familiar with these; the most common of these types, however, is the medium type. The mild abortive types are very uncommon. Sequelae are not especially common following cerebrospinal meningitis in infancy, as few live to have them. The most common, however, is hydrocephalus, others are spastic paralysis, deafness and blindness with mental impairment.

The fatality in cerebrospinal meningitis in infancy before the use of the serum, from 85 to 100 per cent., has been materially changed by the serum treatment. Flexner reports as low as 43 per cent. One case which recovered was only 4 weeks old. The prognosis depends in these cases on how early the serum is used, the earlier the better. Recovery takes place sometimes even when the serum is used late in the disease, and it should always be tried, but if used late sequelae are more apt to follow.

The chief action of the serum is on the diplococci themselves. It limits their multiple action and causes their rapid death and disintegration. Phagocytosis is stimulated, and the organisms are rapidly taken up and digested. Since the action of the serum is on the organisms themselves the serum should be introduced directly into the canal itself in order to avoid dilution. This is accomplished by spinal puncture, as much fluid as will come away is drawn off before the serum is introduced in order that it may not be diluted any more than is necessary; 15 c.cm. should be used in infants, 30 c.cm. in older children, unless symptoms of cerebral pressure appear. If only a small amount of fluid is obtained you should attempt to use the serum just the same. It means the formation of scar tissue in the subarachnoid spaces and the ventricles are closed. The serum in such cases should be used in the anterior fontanel when you can not use it in the canal. The serum should always be raised to body temperature before using.

Many cases are cured quickly by the early use of the serum, almost all are relieved even if they progress to a fatal issue. In rare cases the serum seems to have no effect at all. Morse reports two such cases but is unable to explain the reason. The results are less satisfactory when the serum is used late, especially so in the chronic cases, but even in them the results have been sometimes surprisingly good.

I will not take up the cases of meningitis that are caused by the pneumococcus and bacillus of influenza as they are so rare that for practical purposes we need not consider them.

ATTEMPTED SUICIDE BY THE HARA-KIRI METHOD WITH RECOVERY

EDWARD L. CORNELL, S.B., M.D.
CHICAGO

The case I wish to report was admitted to the Cook County Hospital on Dr. George Amerson's service. I wish to thank him for the privilege of reporting the same.

Case 471133.—J. K., married, aged 32, laborer; born in Hungary; entered Dec. 20, 1911, at 7:40 a. m. Patient had been drinking heavily the previous night and in an angry fit took a razor and attempted to commit suicide by slashing his abdomen. He reached the hospital about two hours after the injury. Before admission he was attended by the city ambulance physician who put back about 12 feet of intestine and wrapped the abdomen in a sheet obtained in the home. On admittance there were about 6 feet of intestine lying in the sheet. The sheet was not any too clean. He was still well under the influence of alcohol. His pulse was regular, slow and not strong. Respirations were shallow. He was immediately placed under ether anesthesia and put on the operating table. No attempt was made to sterilize the skin or field of operation, because of the large amount of intestine lying loose on the abdomen. Sterile sheets and towels were placed around the patient as in the usual abdominal operation and the intestines were then wrapped in sterile towels moistened with normal salt solution. The intestines were run over for a distance of about 12 feet and two sharp-cut openings were found in the small intestine. These ran lengthwise of the gut and were about 1 inch in length. There was no leakage of intestinal contents found on the outer surface. The openings were closed with silk in two layers. The intestines were then dropped back into the abdomen and the omentum pulled over them.

The abdominal opening was located about one-half inch below a line drawn between the lower border of the costal arch. The skin incision measured approximately 11 inches. It was deeper on the left side than on the right. The left rectus muscle was cut deeper on that side also, in fact nearly cut in two the whole width. The peritoneum was cut through about half the length of the rectus muscle. On the right side the cut in the rectus was gradual, the median half being cut through. The peritoneum under it was cut for approximately the same distance. We therefore had an opening in the peritoneum about $3\frac{1}{2}$ inches wide. The peritoncum, muscles, fascia and skin were closed by catgut and silkworm gut. No drainage of any description was used. The patient was returned to bed fifty minutes after entering the hospital. Pulse was 96 and of better quality; respirations, 24.

The pulse gradually rose to 124 and remained there about twelve hours, when it came down to about 92. The highest temperature he had during convalescence was 100.2 by mouth, which occurred within twenty-four hours after operation. He was placed in Fowler's position fifteen hours after operation, and given normal salt solution $\frac{3}{4}$ vi every four hours for thirty-six hours. The next day he was asking for food. Beginning December 22, for breakfast, he was put on a soft diet. He made an uneventful recovery, being up on December 31 and discharged January 1, at his own request.

Some may ask the question why was not drainage put in? The reasons for not doing so are: First, the man was in excellent health before the injury. He was strong and working regularly in outside employment. Second, it is a regularly observed fact that in healthy animals no infection follows in intraperitoneal injection of urine and

other fluids which contain bacteria. Therefore, it was reasonable to conclude we were not taking undue chances of peritonitis in this case, as the peritoneum was in healthy condition. Then, too, the fecal contents had not entered the cavity. Third, the patient was in the hospital, where it would have been the matter of only a few minutes to put him under an anesthetic and institute drainage if necessary.

122 South Michigan Avenue.

A DOCTOR OF THE OLD SCHOOL

I can see him still as in the long ago,
With his beard so long and white as snow,
Hanging two feet below his chin;
And the hair on his head was white and thin.
His face! A face beloved by all,
A forehead broad and grand and tall,
The sparkle of life in his deep blue eyes,
To look into them was to realize
That the soul within was great and good;
Kindness and charity he understood,
Stooped were his shoulders and frail his frame;
Old Doctor Marshall — that was his name.
Our old family doctor — everybody's friend,
Always ready his helping hand to lend,
Simple were his manners and gentle his ways,
A little old fashioned, as they say now-a-days.
BUT HE GAVE TO ALL THE BEST HE HAD,
And many are the hearts that he made glad,
He was all that was noble and great and grand,
Yet so humble a servant that all could command,
The rich, the poor were alike to him,
Not to answer a call he deemed a sin.
His work he held sacred, his calling high,
As I now see his goodness methinks you and I
Might well emulate him, his kindness and beauty
By mixing his virtues with our own daily duty.
He lived true to his calling, God's worthy tool,
For he was a doctor of the old, old school.

—By Bacillus Poeticus.

ARTHUR G. BOSLER.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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MARCH, 1913

THE PEORIA MEETING

We understand that the arrangements for the annual meeting at Peoria are being rapidly consummated. The sessions will be held in the spacious Shriner's Temple, which is provided with comfortable seats, and is well ventilated. The new Jefferson Hotel will be the headquarters. Dr. Theodore H. Weisenburg, of Philadelphia, Professor of Neurology in the Medico Chirurgical College, will attend the meeting, and give a lecture each day, illustrated by moving pictures. Dr. Weisenburg has 60,000 feet of films and illustrates every form of nervous disease.

Other educational and entertaining features will be introduced, and no member of the Society can afford to miss the meeting.

THE ILLINOIS STATE BOARD OF HEALTH

The terms of office of the seven members of the State Board of Health have expired, the last one on Dec. 31, 1912. Attorney-General Lucey has recently rendered an opinion that the Civil Service Law is null and void. This decision if sustained, will leave Governor Dunne free to select an incumbent for the office of Secretary of the Board, Dr. James A. Egan. Dr. Egan has *held* this position since about May 1, 1897.

THE ILLINOIS LEGISLATURE

The Forty-Eighth General Assembly has been in session for two months. Thus far little has been done towards advancing legislation. It is probable, however, that real work will begin as soon as the state officials have returned from Washington. Up to the present time the following bills have been introduced affecting particularly the medical profession:

FORTY-EIGHTH GENERAL ASSEMBLY

SENATE BILL NO. 125

For an act making an appropriation for the erection of buildings, other improvements, supervision and care of property, for the new hospital for the insane, designated by the Board of Administration as the "Alton State Hospital."

BILL NO. 120

For an act to enable cities, towns and villages to prohibit fortune telling for gain or profit.

BILL NO. 4

For an act making an appropriation for the purchase of grounds and the erection of buildings and the equipment thereof for a hospital and industrial colony for the care, treatment and occupation of inebriates.

BILL NO. 18

For an act to provide for the location, erection, organization and management of a State sanatorium for persons afflicted with tuberculosis, making applicable thereto "An Act to regulate State charitable institutions and the State Reform School, and to improve their organization and increase their efficiency," approved April 15, 1875, and making an appropriation for the purchase of land, and the construction of the necessary buildings and the maintenance of the sanatorium.

BILL NO. 66

To provide for the registration of all births and deaths in the State of Illinois.

BILL NO. 3

For an act to provide for the treatment of public intoxication and inebriety; establishing a hospital and industrial colony for the care and treatment and occupation of inebriates.

THE MEDICAL DEPARTMENT OF THE
STATE UNIVERSITY

Particular attention is called to the letter of Dr. C. S. Bacon advocating the appropriation of money by the General Assembly for the Medical School of the University of Illinois. As Dr. Bacon says, there will be opposition to the plan both in and out of the profession, but the State Society at its last session having voted favorably on this subject, it is up to the members to give it careful consideration and take action according to their judgment. We would suggest that each member of the State Society talk the matter over with the representatives from his district and see that he thoroughly understands what it means to have the State take up medical education in a proper way and push it to its legitimate conclusion. If Illinois once appreciates this problem it will be worked out to a glorious consummation.

INDEX OF SOCIETY TRANSACTIONS

After many weeks of preparation, the Council of the Illinois State Medical Society expects to issue in the near future an index covering the first fifty years of the Society's existence. This begins with the preliminary meeting held in Springfield in 1850, and closes with the meeting of 1899, held at Cairo. Curiously interesting is the fact that the Society was in its fiftieth year when the JOURNAL was founded. From the time of the founding of the JOURNAL the proceedings and papers read before the state and local societies obtained wide publicity. In the early years only a limited number of the annual transactions were issued. The Chicago fire destroyed a great many of the early volumes, and as far as we know, there are only two complete sets—one, belonging to the society, is stored in the Lincoln Library, Springfield; the other is to be found in the Crerar Library, Chicago.

To add interest to the volume containing the index, it is proposed to insert the photographs of those who were active in its business. These will be, of course, the presidents and secretaries; the chairmen of committees, etc. The following list is believed to embrace the most active members during this period, and we will thank our readers if they will kindly send photographs, or inform us where they can be obtained.

The index will be distributed to each member of the society in good standing without charge.

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|---|---|
| ALBION—Thompson, Samuel. | J.; Miller, DeLaskie; Montgomery, W. T.; Moyer, H. N.; Newman, H. P.; Owens, J. P.; Park, C. S.; Park, Roswell; Patrick, H. T.; Powell, Edwin; Quine, W. E.; Reynolds, H. J.; Schaeffer, F. C.; Steele, D. A. K.; Stevenson, Sarah H.; Thompson, Mary H.; Tilley, Robt.; Todd, J. F.; Ware, Lyman; Wing Elbert. |
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| CARLINVILLE—Corr, A. C. and L. H.; Matthews, J. P. | EVANSTON—Jewel, W. S. |
| CARTHAGE—Veatch, W. H. | FREEPORT—Caldwell, W. S. |
| CHAMPAIGN—Pearman, J. T. | GILMAN—Wenger, Elias. |
| CHANDLERVILLE—Read, N. S. | GIRARD—Mitchell, R. J. |
| CHARLESTON—Chambers, W. M. | GRANDVIEW — Stormont, D. W.; Steele, J. M. |
| CHATHAM—Wright, N. | HEYWORTH—Noble, H. |
| CHICAGO—Andrews, Edmund; Babcock, R. H.; Billings, Frank; Brainard, Daniel; Bridge, Norman; Brower, D. R.; Brown, Sanger; Byford, H. T.; Danforth, I. N.; Davis, N. S.; Earle, C. W.; Fenger, C.; Fitch, T. D.; Freer, J. W.; Graham, D. W.; Hamilton, J. B.; Hay, Walter; Herrick, J. B.; Hollister, J. H.; Holmes, F. L.; Ingals, E. and E. F.; Johnson, H. A.; Jones, S. J.; McArthur, L. L.; Mergler, Marie | HILLSBORO—Washburn, T. D. |
| | HOOPESTON—Pierce, W. P. |
| | JERSEYVILLE—Du Hadway, C.; Gill, H. Z.; Van Horn, A. K. |

JACKSONVILLE—Black, C. E.; Pitner, T. J.; Prince, A. E.; Prince, David; Roe, Edward; Wilbur, C. T.; McFarland, Andrew; Norbury, F. P.

KANKAKEE—Dewey, R.

KEWANEE—Nance, Hiram.

KNOXVILLE—McClelland, M. A.

LACON—Boal, Robert; Thompson, L. G.

LINCOLN—Miller, Katherine; Norred, C. H.; Norred, Elizabeth; Wilson, R. M.

MARSHALL—Payne, F. R.

MASON CITY—Walker, J. P.

MENDOTA—Cook, E. P.

METAMORA—Whitmore, J. S.

MONMOUTH—Whitmore, J. S.

MT. CARMEL — Maxwell, J. B.; Schneek, J.

MT. PULASKI—Oyler, P. H.

NEOGA—Albin, G. W.

NOKOMIS—Whitten, T. J.

OTTERVILLE—Williams, J. S.

PARIS—Massie; Wm.

PEORIA—Cooper, E. S.; Coulter, J. H.; Hamilton, J. L.; Johnson, J. P.; McIlvaine, T. M.; Miller, J. S.; Murphy, J. P.; Rouse, R.; Roskoten, Robt.; Will, O. B.

PETERSBURG — Newcomer, J. W.; Whitley, J. D.

PLANO—Jenks, D. S.

PRINCETON—Breed, S. P.; Paddock, S. A.

PULLMAN—Rankin, A. C.

QUINCY—Byrd, W. S.; Robbins, Joseph; Rooney, A. F. and M.

RIDOTT—Walton, M. W.

ROCKFORD—McArthur, A. L.

ROCK ISLAND—Plummer, S. C.; Truesdale, C.

ROSCOE—Ransom, W. L.

RUTLAND—Ensign, W. O.

SHELBYVILLE—Reber, C. T.

SPARTA—Booth, D. S.

SPRINGFIELD—Griffith, B. M.; Kreider, G. N.; Rauch, J. H.; Roman, J. H.; Townsend, Justus.

SYCAMORE—Nesbit, G. W.

OLONO—Darrah, A. T.; Johnson, C. B.

TOULON—Hall, Thomas.

URBANA—Birney, S. H.

VANDALIA—Haller, H. B.

WARREN—Crummer, B. F.

WATERLOO—Wetmore, A.

WAUKEGAN—Carter, J. M. G.

WAVERLY—McVey, R. E.

WILMINGTON—Willard, E. R.

WINCHESTER—Miner, Jas.

WYANET—Robinson, F. C.

BANQUET GIVEN TO THE EX-PRESIDENTS OF THE CHICAGO MEDICAL SOCIETY

In honor of twenty past presidents of the Chicago Medical Society, a dinner was given Feb. 12, 1913, at Hotel Sherman. More than 700 physicians of Chicago and outside cities, with the wives, attended the banquet. The room in which the banquet was held was tastefully decorated with American Beauty roses and American flags. Pictures of Lincoln and Washington were hung over the table of the guests of honor. It was the first banquet of its kind ever given by the Society. The President of the Society, Dr. Jacob Frank, was toastmaster of the evening.

Previous to the after-dinner speaking, President Frank introduced Dr. J. Rawson Pennington of Chicago, who presented the Society with a portrait of Dr. N. S. Davis, Sr., and said he hoped its acceptance would carry with it the appointment of a committee to secure (without cost to the Society) the portraits of all ex-presidents of the Chicago Medical Society.

President Frank, in accepting the portrait in behalf of the Society, said it was an unexpected and pleasant surprise to receive the oil paint-



WILLIAM E. QUINN, M.D.
1874-1875



DAVID W. GRAHAM, M.D.
1875-1876



DANIEL A. K. STEELE, M.D.
1876-1877



EDMUND J. DOERING, M.D.
1877-1878



WILLIAM T. BELFIELD, M.D.
1878-1879



FRANK BILLINGS, M.D.
1879-1880



LEWIS L. MCARTHUR, M.D.
1880-1881



HAROLD N. MOYER, M.D.
1881-1882



ARTHUR DEAN DEVAN, M.D.
1882-1883



JUNIUS C. HOAG, M.D.
1883-1884



JAMES H. STOWELL, M.D.
1884-1885



WILLIAM A. EVANS, M.D.
1885-1886



ROBERT D. PREHLER, M.D.
1886-1887



JOHN B. MURRAY, M.D.
1887-1888



CHARLES A. BACON, M.D.
1888-1889



GEORGE W. WEBSTER, M.D.
1889-1890



HENRY E. FAVILL, M.D.
1890-1891



ALFRED C. COTTON, M.D.
1891-1892



JOHN A. ROBINSON, M.D.
1892-1893



JOSEPH M. PATTON, M.D.
1893-1894

Ex-Presidents Chicago Medical Society, 1874-1912

ing of one of the founders of the Chicago Medical Society, Dr. Nathan Smith Davis, Sr., who had left a rich inheritance with his immortal name. He accepted the portrait with grateful thanks.

Before introducing any of the ex-presidents, Dr. Frank, in acting as toastmaster, made the following introductory remarks:

Honored Ex-Presidents of the Chicago Medical Society, Friends:

It is a rare privilege and honor indeed to welcome, in behalf of the Chicago Medical Society, twenty of our esteemed ex-presidents. (Applause.) These gentlemen, whom we are proud in honoring to-night, represent thirty-eight years of marvelous progress made in the science of medicine and surgery. In honoring these gentlemen to-night who have at various times presided over our great organization and have given generously of their time and talent to its upbuilding, we certainly do honor to ourselves. The harmony and good feeling that prevail, and which is evidenced by this great assembly, prove beyond a doubt that the foundation on which our society was erected and has stood so nobly through calm and storm for sixty-three years, has been replaced by new modern concrete caissons which rest on solid rock. (Applause.) Its friendships have been girded by the strongest of steel. A society constructed on these lines must last for all time. Let us then on this occasion forget the cares, worries and responsibilities that come with our chosen calling and all join in making this night and this gathering a glorious and memorable one in doing honor to our eminent past presidents. (Loud applause.)

(Three lusty hurrahs were given for the ex-presidents, who arose and bowed in acknowledgment of the ovation given them.)

The first speaker of the evening was introduced as the Dean of the Ex-Presidents, a man who had taught medicine in Chicago for forty-four years — Dr. William E. Quine.

Dr. Quine said that his connection with the society began in the spring of 1870, within sixty days after his formal start as a medical practitioner. At that time the meetings were held in one of the rooms of the old court house. At the ensuing annual meeting Dr. William Godfrey Dyas was elected president, and thereafter the meetings were held in Dr. Dyas' office in the Methodist Church block until the devastation of the great Chicago fire in October, 1871. The next place of meeting was one of the parlors of the Gault House, a hotel located on parts of the site now occupied by the Chicago and Northwestern Railroad, in the west division of the city. The meetings were held weekly, and the attendance was distinctly larger and included a larger number of the younger members, after the great fire, than it had been before. The business of the meetings consisted of reading of formal essays, reports of cases, the exhibition of pathologic specimens, and, occasionally, of new instruments and then conversations or debates on topics of the evening consumed the remainder of the time. The organization was small, but compact, and within rather narrow limits it was vigorous. There were no women members at this time and the prejudice against women in the profession was strong.

Dr. Quine mentioned the foremost supporters of the society during this period of its history, and stated that these men upheld and strengthened the professional ideals and moral standards which physicians now delighted to honor.

He closed his remarks by saying: "Peace to the ashes of our fathers in medicine, and love and reverence. They left us a priceless legacy — for an ideal is the greatest asset possible for a physician to own. For this legacy we bless their names forever and forevermore." (Applause.)

Dr. David W. Graham, the next speaker, said that there were a number of events that occurred during the year he presided (1883-84), which were of a personal nature.

First, he was one of the attending surgeons of Cook County Hospital along with Dr. Steele. The Presbyterian Hospital was also organized in 1883, and he became identified with it from the first as one of the four original surgeons. Also in that year (1883) the faculty of the Woman's Medical College elected him as Professor of Surgery in that institution. In the year 1883, when he was president, Mr. Mac Cormac, since known as Sir William Mac Cormac, of St. Thomas' Hospital, London, who was in the height of his surgical career at that time, visited Chicago and the Chicago Medical Society entertained him. He gave an interesting lecture. At that time the membership was something over 200. Now the membership was approximately 2,000. In those days a greater proportion of the membership attended the meetings than to-day.

Dr. Daniel A. K. Steele stated that he had the honor of serving as president during the year 1884-1885, it being the 34th anniversary of this Society. It was a notable year in the medical history of Chicago. Fifty-one new members were received during his presidency. The average attendance at each meeting of the year was thirty-seven out of a total membership of 293. It was a notable year, inasmuch as it marked the entrance of a group of young, ambitious and active physicians into the medical politics of the city, state and nation, and the infusion of new blood, new enthusiasm and new names into the membership. Such men as Drs. E. J. Doering, Frank Billings, E. W. Andrews, Franklin Martin, Frank Johnson, L. L. McArthur, and a few others of equal prominence, full of enthusiasm and a desire to change the then existing conditions in the Chicago Medical Society, and infuse new life and activities into its work, were instrumental in electing him president of the Chicago Medical Society on April 7, 1884. In this year Nicholas Senn presented his classical paper on "Cysts of the Pancreas" before the American Medical Association, and Charles T. Parkes published his epoch-making paper on the experimental surgery of gunshot wounds of the intestines.

Dr. E. J. Doering said that during his term of office (1886-1887) they changed the method of reporting the meetings in longhand to shorthand. They also organized the *Chicago Medical Recorder*, which for several years published the proceedings of the Society until the Society changed to the ILLINOIS MEDICAL JOURNAL. One-third of the total membership organized the Chicago Medico-Legal Society, which did all the work and carried on the functions which were now being performed

by the Medico-Legal Committee under the chairmanship of Dr. Moyer. During twenty years of active existence they kept twenty blackmail suits from going to trial.

Dr. William T. Belfield stated that up to the early 80's surgery was the least attractive, because the least hopeful and promising branch of practice. Those whose hair was whitening and thinning could recall a picture which it would be difficult for the younger members of the Society to even imagine. Fancy, if they could, the then new County Hospital reeking with suppuration, erysipelas, septicemia and pyemia, with patients dying of sepsis after the amputation of a finger or a toe, one-third of the patients with compound fractures dying of pyemia, and one-tenth of all parturient women dying of blood-poisoning. Why? Because the causes and hence prevention of wound infections were then entirely unknown. He could well recall the picture of the dressings of wounds in these wards when he was a student. All the wounds suppurated, because all were washed and wiped with the same sponges wet in hydrant water carried in the same pail. The surgeon always washed his hands after operating and sometimes before. (Laughter.)

During his sojourn in Europe in the early 80's, the relation of bacteria to wound infection was revealed, and to this fascinating topic he gave considerable attention and brought home a large number of slides of all the then known pathogenic bacteria, including the tubercle bacillus of Koch. He believed they were the first bacteria ever seen in America. When he received the honor of the presidency in 1887, the secretary chosen at the same election was another modest young blood, named Frank Billings. As one might imagine their administration was characterized by a strenuous preaching of the gospel of bacteriology. They had lived to see bacteriology rank as a fundamental branch; also wound infections banished from the operating-room; also the great cosmopolitan Chicago Medical Society giving critical and appreciative audiences to reports of progress from all quarters of the globe. He expressed the wish that some of these leaders might grace this occasion with their bodily presence — Davis, Senn, Fenger, Parkes, Henrotin — these kings were dead. Long live the kings.

Dr. Frank Billings said that his term of service marked the beginning of scientific medicine in the Chicago Medical Society. He could remember all the worthies to whom Dr. Quine called attention, and he thanked God from his innermost heart that he knew Edmund Andrews, N. S. Davis, H. A. Johnson, William H. Byford, James Adams Allan, Charles T. Parkes and Moses Gunn. These men taught more than mere knowledge; they taught character. In the last twenty-three years since he was president, he had watched the progress of medicine and it was the grandest era medicine had ever known. Thirty-one years ago, when he graduated, there was more strife in the medical profession of Chicago than there had been any time since. There had always been strife in the Chicago Medical Society, and he expressed the hope that there might always be strife in the Society, for when strife ceased we were dead, so

he welcomed strife which was honorable in the Chicago Medical Society. He liked to see disputes in it for it meant the members were alive.

Dr. L. L. McArthur said he was the only one to his knowledge, who, aside from Dr. N. S. Davis, had had the honor of enjoying the office of President for more than one term, due to the death of Dr. Charles Warrington Earle of sainted memory and very much beloved, who died during the time of his vice-presidency, and he filled out his unexpired term. It was his great pleasure and honor at the termination of his office as vice-president serving in the capacity of president, in the absence and death of Dr. Earle, to nominate as president of this Society Dr. Nicholas Senn, and to waive all claim to that appointment, although his name was one the nominating ticket at that time. Dr. Senn during that year gave to the Society that most magnificent library of his, comprising more than 10,000 volumes. The Chicago Medical Society was an organization of which all might be proud.

Dr. Harold N. Moyer stated that the year of 1896-1897 was a transitional year in the history of the Chicago Medical Society. Science had been introduced tentatively, somewhat weakly, by two or three of his predecessors. (Laughter.) He had joined the Society under the presidency of Dr. Steele. The Society had not increased largely in numbers. Enthusiasm had grown. The scientific work had grown, but somehow he felt as though the great body of the profession was not as numerously represented in the membership that day as it should be; consequently it devolved on him and the other members to get out and hustle in new members, those whom they thought were needed and would add to the scientific work and be helpful in the organization, and that was largely the work that was done at that time. There was substantial increase in the membership which in the following year, when he was succeeded in the presidency by the late Fernand Henrotin, resulted in having a membership which justified getting a permanent home for the society, renting quarters and having a place where the members could meet. That year was a distinct and substantial growth which landed the Society in new quarters, and the Society nearly doubled its membership in that and the succeeding year.

Dr. Arthur Dean Bevan, speaking of medical education, said that marvelous changes had been made, that the men who had taught those present were great men. They taught well the knowledge of their day, but since that time there had been a revolution. A new science had been born—the science of medicine. A great change had taken place all over the world in the teaching of medicine. The number of medical colleges in this country had declined from 156 to 100 or less; that the standards of medical education were being so rapidly raised that within a few years we should be on as high a plane as the medical schools of Germany, the Continent generally, and Great Britain. Chicago should be made the great medical center by seeing to it we had medical schools here of the highest grade and none of any other kind. We should see to it and educate the public to recognize the fact that our great Cook County Hospital should be made the center of medical instruction, and

put on the same footing as the Krankenhaus in Vienna. We should recognize it was necessary for us in the state of Illinois to have in the State Board of Health trained sanitarians, a great many of them, with a sufficient appropriation to give to the state of Illinois and to the City of Chicago the possibilities of preventive medicine.

Dr. J. C. Hoag stated that his opinions relative to the society were based on observations made during a long period of active participation in its work, for he occupied the office of secretary thirteen consecutive years and that of vice-president for one year, before his election to the presidency. The Society was founded by wise and able men, some of whom aided in its aggrandizement by their active support and generous counsel, until ripe in age and rich in honors, they left this sphere of terrestrial activity and leaving it bequeathed to their successors one of the most notable societies of its kind to be found on this earth. Heaven, indeed, may have bigger and better medical societies, but he knew of none better here. The founders and early leaders were so wise, so potent in organization, so earnest in promoting the common professional interests, that it had been relatively an easy task for their successors to build up the foundations laid down by them so long ago.

The audience did not need to have called up to memory a type of the class of men to whom he referred. There was one who in his character and achievements fitly represented them all — N. S. Davis. From early manhood until the end of an unusually long life, he was foremost in the upbuilding of our profession. He was a great medical teacher; a great advocate of temperance and right living; he was a man who made a lasting impression on his times.

Dr. James H. Stowell stated that it was in 1900 that the progressive men came to the front. For ten years he had been the chairman of the membership committee, and among other things he had had the privilege of recommending as members of this Society some of the distinguished friends seated at the speaker's table. Dr. Stowell mentioned a number of distinguished physicians whom he had invited as president to address the Society on different occasions. The memory of this evening would be treasured by all, and we should be proud of the day when we could see the splendid things which Dr. Bevan had called attention to accomplished, and which we ourselves should become interested in. Every word uttered by Dr. Bevan is true and should be burned into the hearts of every member of the commission investigating medical colleges. Everyone should put forth his best efforts to raise the standards of medical education and to make this city and this state an honor and glory. To do this it was necessary to put our shoulders to the wheel and press on to the good work.

Dr. William A. Evans pointed out that in the early history of Chicago there was necessarily a local patriotism, certain Chauvinism, and it was not his purpose to belittle the influence of that spirit in the creation here of something out of nothing. In the building up of an empire city here, in the building up of a well-known medical center, where in less than 100 years ago there was a wilderness, in that stage of

the society there was necessity for local patriotism, for Chauvinism. There was necessity for this point of view, for this function of activity, for this main spring of energy. But there came a time when there threatened seeding of this plant. There came a time when it seemed probable that the very plans that had carried us forward would serve to limit us henceforth, for this Chauvinism there came a man bringing to American medicine a scientific point of view, bringing to American medicine a certain broadening of spirit, a certain brotherhood, a certain scientific atmosphere, and it was his wish that the Society should pause between the fulness of the day's work of yesterday and the day's work of to-morrow to pay tribute to the man who contributed more than any other man to the fulness of that work, the successor as president of Dr. Stowell and his predecessor in the office of president — Christian Fenger.

Dr. Robert B. Preble said the years 1903-1904 were periods of peace and prosperity in the Chicago Medical Society. The activities of the organization were particularly directed towards organization among the members of the profession here in Chicago. The Society grew with great rapidity. The scheme of branch societies and the details of their organization were pushed forward with great energy and with beneficial results to everybody. During the years 1903-1904, two very distinguished members died, namely, Drs. N. S. Davis and Edmund Andrews, the former having wielded a very powerful influence over the profession in his time. The latter was for years one of the most distinguished surgeons of America; a man of such broad culture and character that he was a stimulus to every man who came in direct or indirect contact with him.

Dr. John B. Murphy said that it was important in the advancement of every science that the general welfare of all its individuals should be studied and cared for. The temple of science in its construction was made of many arches; the pillars of the arches were filled in by the men who do the every-day work, but the genius was not machine made. What is genius? It is the courage to break through fixed prejudices and ideals and strike out on a pathway alone. The man who could do that and withstand the depressing and biting effects of criticism and wit could come to the class of geniuses, and when one looked over the history of the world, the men who did things were not men who were college-bred or trained from their infancy to be great. They sprang up in the wilderness, among the prairies and in the back streets and learned to think as free men first, and free thinkers; they broke through the bondage and through the opinions of their day and did new things. If the men of this Society produced anything great, it would be through breaking through the regular order of things of their day and time, and if he were to ask the members of this Society to do one particular thing, it would be this: to encourage every young man who had an idea to bring it before the society and give it a careful, conscientious and attentive hearing and stimulate him to do more work and more thinking in that line.

Dr. Charles S. Bacon spoke of the events of the year 1905-1906, when he was president. Reorganization was perfected in the time of

Dr. Preble. Branch societies were organized and the affiliated societies were in good condition, and everything was going on smoothly, and it was not at all difficult to accomplish something. There were present at the meetings of the Society during that year an average of 150 members. The programs were made up of papers by members of the society in great measure. The discussions were stimulated by inviting one or more members to discuss each paper. The authors presented abstracts of their papers for those who were to discuss them, so that prepared discussions were a feature of the program. The Society was in good financial condition. Dr. Bacon also referred to the excellent work done by the different committees of the society from time to time. As he reviewed the activities at that time, he was justified in saying it was a year of peace and prosperity, and hoped that more might come.

Dr. George W. Webster said that the most conspicuous and notable event which meant so much for the future welfare of the race was seen in the pushing farther back into the causes or conditions which tended to produce those ailments which we were formerly content to treat, and which we now sought to prevent. Causes had been sought for and found by our scientists and the causative agents of such diseases as malaria, yellow fever, pneumonia, tuberculosis, spinal meningitis, typhoid fever, infantile paralysis, diphtheria, rheumatism and suppuration and a host of others were well known to us, their mode of transmission was well known, the rôle of flies and mosquitoes and human distributors in their transmission was in many cases fully understood, their terrors in many cases had been minimized, in other cases we were able to prevent, and by means of serum and vaccines, the horrors of others had been almost wholly eradicated.

Especially within recent years, more particularly in the last decade, we had been fired with the enthusiasm born of a newer and a nobler thought that prevention was possible, that prevention was better than cure, that prevention had become the dominant note in modern medicine. In 1875, we were concerned chiefly with cures; we were now concerned with causes and prevention. Where cure was once the supreme ideal, to-day prevention was the chief aim, and to-day in the United States preventive medicine held its own against all the world, and we were even now only on the threshold of the door leading to the halls of hope.

The newer conception finds expression in an enormous amount of efficient, valuable public health work, municipal, state and national. Perhaps he might be pardoned for mentioning one item of his own work in this field. He referred to a work which he conceived, recommended and brought into execution, the free distribution of diphtheria antitoxin in Illinois. This saved the taxpayers, at a very reasonable estimate, over \$75,000 per year, and had saved an average of three babies' lives each day for the past four years.

A notable change in the attitude of the profession was an ever-increasing diversity of interest and effort. As examples of this, he cited housing reforms, occupational disease laws, ten-hour law for women, health, comfort and safety legislation, the advocacy of the sterilization

of the unfit, child labor laws, movements looking to the prevention of infant mortality, prevention of unnecessary blindness, medical inspection of schools, recognizing and minimizing the effects of racial poison, such as lead and alcohol, the study of eugenics, pure-food laws, social economics, the study of fatigue and efficiency.

The future of medical education rests on the state. The state was responsible for its citizens, and no greater responsibility existed than the proper education of its physicians, as the health of the people was the supreme law. The state, therefore, should establish university standards and university ideals, and then provide for them. If the state controls medical education it should support it.

Incidentally, one of the most lamentable failures of practically all our states was the utter failure to make provisions for the proper training of those men who were to enforce health laws and solve health problems.

In the past, every step in the pathway of medical research and progress had been marked by the bloody footprints and the lonely graves of the martyrs of medicine, but through all these strenuous, wonderful years, a voice, never silent in the history of the world, had been growing deeper and louder, the voice of a man calling unto men, not for alms, not for charity, but for justice and, an answering in a louder voice, and with a more emphatic affirmative than ever before the query of Cain, "Am I my brother's keeper?"

Dr. Henry B. Favill said that most of the distinguished gentlemen who were sitting at the speaker's table were presidents of the Society during the days when it was a dignified, sober, self-respecting body, which they presided over with dignity, more or less soporifically, and in which they were at perfect liberty to go to sleep during the exercises and nobody criticised them. (Laughter.) There was nothing like that in his day. He was perfectly free to admit that Dr. Evans started something when he reorganized the Society, and when he constituted the council as a typical, active working body of the Society, he opened up a battlefield. (Laughter.) Under the genial warmth and sunshine of Preble and Bacon and Webster it incubated, but if he had to state the history of the occurrences during his period, it would be that of a lion-tamer who was eaten up. (Laughter.) But he was not going to pursue that subject.

There had always been something the matter with the Chicago Medical Society, and until to-night he never knew what it was, but he now knew the thing that had been the matter with it was lack of that broad social intercourse which should include all the workers, that should include all the families, as the titular head of the family or "the powers that be." We needed as medical men association with our women friends who were on parade. Our relation to our women friends was one not easy or comfortable, especially to them. He did not think any doctor was ever ungallant enough to feel the limitations of his associations with his women patients, because it happens to be under conditions when they were not well. Nevertheless, he was sure women felt that limitation and

felt handicapped in their social relations on account of that fact. He was very certain, and this he would say with great seriousness, that the great problems before the Chicago Medical Society to-day could be better solved, more nearly solved, and more rapidly solved by a broader, more universal, more regular social aggregation than in any other way.

Dr. Alfred C. Cotton stated that if the presidents did go to sleep in the old days, they did not do so in these days; and if Dr. Favill found it a lion-taming job, what did he suppose he left for him as his successor? (Laughter.) Times had changed; the Society that was presided over in a somnolent way, quadrupled its membership until it became the largest local medical society in the world, and naturally it furnished a forum for the exercise of its true function, that of promulgating science. Fourteen branch societies became necessary with their regular meetings, and more to follow. Modesty forbade him to say that it required an entirely different man to preside from what they had heard from the experiences recited.

In regard to the manner and method in which the so-called honor has been brought by many of these ex-presidents, one could paraphrase the words of the immortal bard:

Some were born to the presidency;
Others achieved the presidency,
And others had the presidency thrust on them.

He did not think the session of the Chicago Medical Society for the year 1908-1909 was the most important in its history — *he knew it was*. The Chicago Medical Society came into its own by Brother Favill, Brother Bacon and Commissioner of Health Evans. It was a new era with all the possibilities of organization of the profession of medicine.

Dr. Billings had said that without friction there was stagnation. There must be a fight. We did not stand at Armageddon and battle for the Lord, but we moved right along and fought regardless of political significance. This spirit of progressivism was in the air, and in that spirit the Chicago Medical Society began under his immediate predecessors to realize its true function, which was dual, not only for the propagation of science with all that meant, but for the benefit of its members and humanity by becoming a factor and assuming control of utilities for the benefit of mankind and for the benefit of the medical profession.

During the administration over which he happened to preside, for the first time the referendum was successfully applied by the Chicago Medical Society. For the first time the Society began to go into utilities, one of which it took up for the benefit of humanity. It was uplifting and life-saving. He referred to the establishment of the Milk Commission of which Dr. Bacon was the worthy president.

Dr. John A. Robinson said that during the year 1909-1910 there were quite stormy times, and there were certain dangers which seemed to prophesy destruction of the organization — at least a number of the

society thought so. One of these rocks was the collection bureau, which had been established some time previously and had involved the Society in a debt of \$8,000. The council took hold of the proposition. The Society had an efficient board of trustees and they decided to grasp the problem and settle it if they could. They arranged that the bureau should not be run by the Society, but made a contract with a gentleman to run the bureau at his own risk. This plan was put in operation and run for a certain length of time, but the result was a failure. Then the Board of Trustees decided that the bureau should be absolutely abolished. This was done. The Society did not go on that rock and smash, but steered around it.

Another rock was the abuse of medical charities. It was during the year 1909-1910 that the greatest activity was manifested in regard to meeting this problem. The committee during that year did an enormous amount of work. They prepared the way for carrying out certain ideas and presenting plans to the Society. The Society very cordially endorsed the plan of the committee and attempted to carry it into effect. Unfortunately, it had not succeeded up to the present time, but he thought the plan was feasible, and that a great deal of abuse of medical charity that was now prevalent could be avoided in the city of Chicago.

Lastly, he would always look on the year 1909-1910 as one of the pleasantest years of his experience, and on this night as a night in which he thought our worthy president, Dr. Frank, had achieved a great result.

Dr. Joseph M. Patton, the last speaker of the evening, told two or three good stories, and then said he wanted to take this opportunity to acknowledge the debt of the Society to the members' wives and to express his apology to those present for many interruptions and annoyances they had suffered from time to time at his hands through the council meetings, and committee gatherings, and if in this fellowship to-night they found some consolation, they themselves were well satisfied.

Dr. Patton closed by reciting the following poem from Dr. Oliver Wendell Holmes:

There are no times like the old times,
That ne'er shall be forgot;
There is no place like the old place,
Keep green the hallowed spot.

There are no friends like old friends,
May heaven prolong their lives;
There are no loves like old loves,
God bless our wives.

At the conclusion of the speeches, Toastmaster Frank said: Before bringing to a close this epoch-making meeting, the officers of the Chicago Medical Society extend their appreciation and thanks to the Entertainment and Reception Committees for their untiring efforts and valuable services in arranging this banquet, and to everyone who helped to make this affair a glorious success.

CORRECTIONS TO BE MADE IN DR. THOMAS' ARTICLE IN
THE FEBRUARY ISSUE OF THE JOURNAL

1. Figure 1, page 158, should read "Apparatus No. 1."
2. Figure 2, page 159, should read "Perfected Apparatus."
3. Figure 3, page 160, should read "Compressed Air Sterilizer and Gauge."

Correspondence

ANNUAL MEETING ILLINOIS STATE MEDICAL
SOCIETY

To the Members of the Illinois State Medical Society:—The medical profession of Peoria take particular pleasure in inviting you to the annual meeting of the Illinois State Medical Society to be held in Peoria, May 20-21-22, 1913. We feel that on account of the size and geographical location of Peoria, we can supply everything necessary for your comfort and pleasure, and the attendance should be large. We anticipate that this will be the greatest meeting in the history of the Society.

We have provided possibly the finest auditorium in the state for holding such a meeting, the new Shriner Temple. Besides the city's natural attractions, auto rides for ladies and a steamer trip on the river, as well as other pleasant surprises, offer a special inducement to you to come and bring your family. The scientific program is to be unusually attractive. There are adequate hotel accommodations, and we are assured that there will be no raise in rates.

We take this opportunity of urging all county secretaries and other officers, and everyone interested in medical organization to come Tuesday forenoon in order to attend the "Secretaries' Conference" that afternoon. The program will be *extraordinary*, and it will be well worth your while to come a few hours earlier. Just bear in mind that *Dr. Rock Sleyster* is coming from the northland and is going to bring the *Aurora Borealis* along. Come and hear the star-optimist and organizer of the Wisconsin Society.

Respectfully,

J. H. BACON,

Chairman Committee of Arrangements

E. W. OLIVER,

Of the Publicity Committee.

To the Editor:—The Peoria Association of Commerce and the citizenship of the city of Peoria welcomes the members of the Illinois State Medical Society and hopes the convention, which will be held in Peoria, May 20, 21, 22, will be the most successful in the long history of the organization. The Peoria Association of Commerce, representing as it does, upward of fifteen hundred business and professional men, is enthu-

siastic because of the prospective visit of the Illinois State Doctors. The Association, the Mayor and the City Council join with the local committee in preparation for the visitation.

Peoria, the city beautiful, will be in her gayest attire during the fair month of May. The committee is planning several drives and tours to favored destinations—destinations of profit and pleasure. In no city in the world is there a river driveway so charming as Grand View Drive, which skirts the Illinois River and Peoria Lake for three miles, overlooking a scene of industry, commerce, agriculture and recreation. Along this drive is the Peoria Country Club property where an entertainment



has been planned. From the Observatory Tower may be seen the Illinois River winding its way through forests and grain-bedecked fields for a distance of thirty miles.

The Peoria Park System, including upward of five hundred acres, is spoken of by park men from larger cities as a model. Recently the Pittsburgh city council urged its citizens to adopt a park plan similar to that of Peoria, Illinois. Travelers, statesmen and authors have declared the Peoria Parks to be the finest in type in entire America.

A destination of unusual interest is the Peoria State Hospital, five miles south of the Court House on the Kickapoo River Hills. Here

twenty-five hundred patients are in charge of Dr. Geo. A. Zeller. Dr. Zeller's advanced methods of handling the insane are widely known. This indeed will be a rare treat for Illinois medical men who care to see and learn of improved methods in such an institution.

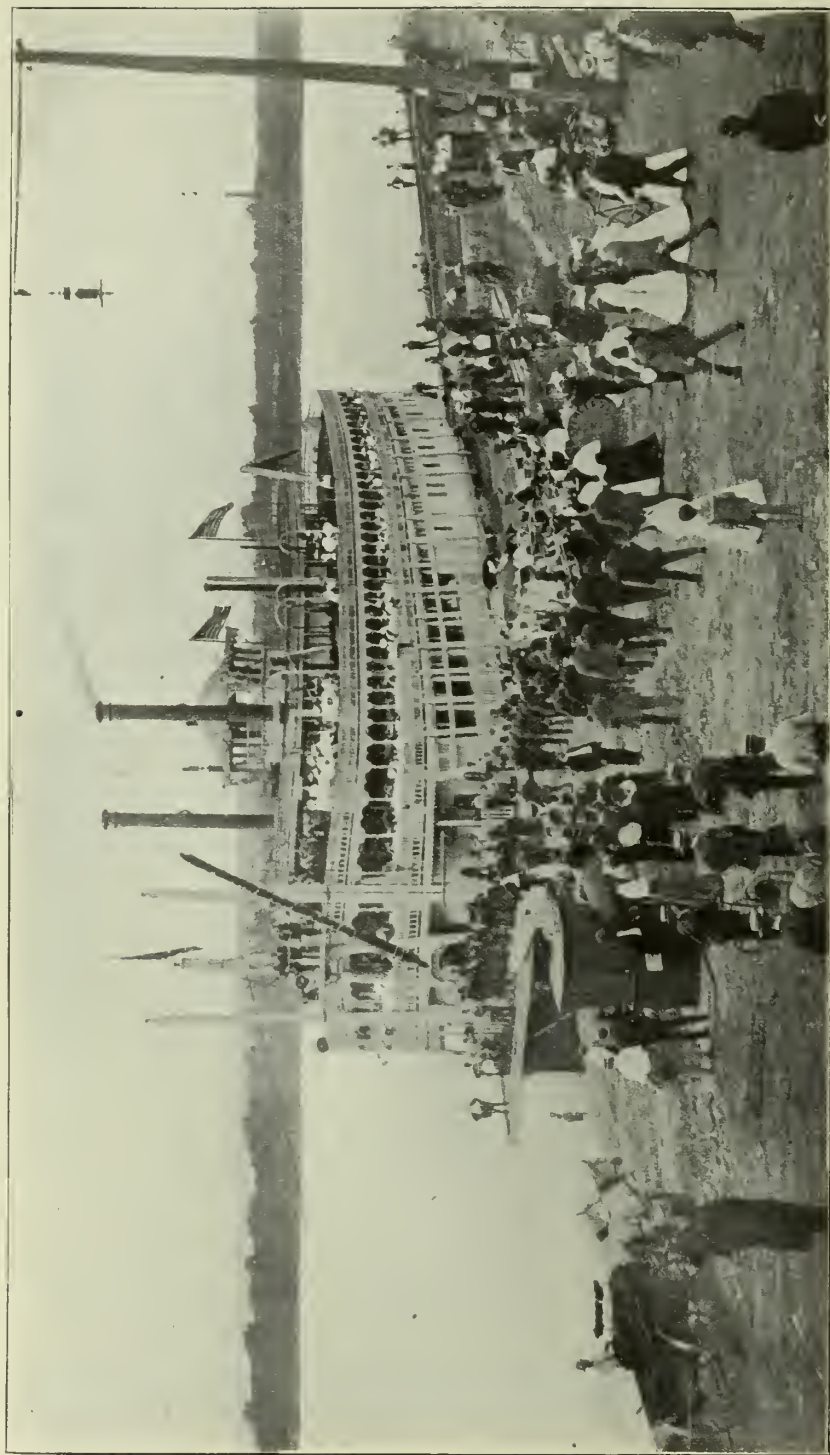
Peoria has miles of the finest pavements and its general illumination scheme in the center and residence portion of the city is the envy of cities like Minneapolis, St. Paul, Omaha and Cincinnati. No city in the United States to-day, population considered, has so many ornamental lamp standards as the city of Peoria. With Peoria's one hundred churches, splendid school buildings, three colleges, hospitals and thousands of fine homes — the splendid river, broad lake, beautiful hills, driveways, parks and the choicest people in the world, Peoria may well claim that element of grace characterized in the book as beautiful.



Shriner Temple, Peoria

Geographically, Peoria is in the center of the state of Illinois, the hub of the Great Middle West. Upwards of seventeen railroads, steam and electric, pass through the city of Peoria. From all parts of the state delegates may come without the annoying changing of cars. Peoria surely has the right to claim accessibility. This feature makes Peoria the great convention city. One hundred conventions were entertained in Peoria last year, and a larger number will be entertained this year. Organizations are anxious to hold their meetings in Peoria because the city is accessible, because of the entertainment programs possible here and because of the splendid accommodations from the standpoint of convention halls.

The Illinois State Medical Society will hold its convention in the Shriner Temple, conceded to be the finest music hall in the state of



Illinois River at Peoria

Illinois. This building was dedicated about two years ago and since has become a mecca for many state and national organizations. The building is as beautiful as it is unique, as charming as it is adequate to convention necessities. The capacity is eighteen hundred, and has a splendid banquet hall and rooms for committee purposes. The Peoria Association of Commerce is convinced that the Illinois Medical Society will never be entertained in a more elegant or better appointed building.

Forgetting Peoria as the city of homes, parks and destinations and a city providing the very best accommodations; forgetting the accessibility of Peoria as a convention site, there is one best reason why every member of the Medical Society of Illinois and every prospective member, should come to the May Convention—because the people of Peoria want you to come. Peoria is blest with a great people, people whose hospitality and good fellowship is unbounded, who want you to visit Peoria because they want you to meet here just as the good neighbor of years ago wanted her next door family to come in during the long winter evenings and sit around the grate and talk of the innocent things of life and be happy.

DESTINATIONS IN PEORIA WORTHY YOUR TIME

Peoria's beauties and advantages are clearly set forth in this Trade Extension number. In all directions from the hub of Peoria city will be found meritorious points of interest.

The Grand View Drive. See the Illinois River Valley. On a clear day, with a good glass, Henry, forty miles distant, is seen. This view is spoken of as rivaling the "canyon of the Colorado," the Potomac view from Mount Vernon, the Hudson and famous Switzerland scenes.

Climb to the top of the Observatory tower at Grand Point near the Peoria Country Club. This point is perhaps the highest in Illinois.

Visit Glen Oak, Bradley, South and Madison parks. No city in the world possesses more beautiful parks.

The Ingersoll statue, lower entrance to Glen Oak Park. Life size bronze, cost \$15,000, the work of Fritz E. Triebel a native Peoria sculptor.

Memorial Hall, Hamilton, between Jefferson and Madison, the gift of Joseph B. Greenhut of Peoria. Here see the bronze statue of General John A. Logan, Triebel, sculptor.

Water works power plant, end of North Adams Street. An immense and powerful pumping station—the climax of mechanics of this character.

Take a spin along the Narrows road. See the beautiful river valley scenery.

In the Court House Square see the beautiful monument of granite and bronze in memory of the soldier and sailor dead of Peoria County. Erected by the women of Peoria at a cost of \$40,000. Triebel sculptor.

Lincoln and Douglas debate tablet on the Court House near this monument. This tablet was unveiled in 1911.

The site of Fort Clark, Water and Liberty streets, marked by bronze tablet.

Camp Peoria tablet, Adams street, corner Cornhill. Dedicated in 1911.

Camp Lyon statue near the upper entrance to Glen Oak Park. This is on the site of the first fair grounds in Peoria County and marks the mustering place of the soldier boys of 1861.

Bradley Polytechnic Institute on the West Bluff. Represents an endowment of \$3,000,000. A thousand students from every state. Seven handsome buildings.

Spalding Institute, the gift of Archbishop Spalding.

Manual Training High School.

Peoria Public Library; the Federal Building, costing nearly three quarters of a million; the Creve Coeur Club; the Carnegie Library; new Temple of the Mohammed, Temple of Mystic Shrine; Women's Club Building; City Hall Building; the Coliseum, seating seven thousand, rent free to conventions; Peoria's beautiful and up-to-date hotels; new building of the Young Women's Christian Association, and the new home of the Young Men's Christian Association; two hundred manufacturing establishments.

The Peoria State Hospital at South Bartonville, with 2,400 patients — a model of its character.

Three finely equipped hospitals, the Proctor, St. Francis and Deaconess.

The Proctor Endowment for aged people, over a million dollars endowment.

The Proctor Playgrounds — the gift of the late John C. Proctor. Visit the Art Gallery in the Public Library Building.

Take a river drive, crossing the public bridge at Bridge Street, skirt the river road to the "upper bridge" and return by Adams Street.

The United States Weather station, costing \$25,000, the gift of the Government.

Famous Sulphur Springs—Glen Oak Park, the Central and the Sulphur Springs Sanitarium, North Adams Street.

A dozen up-to-date theaters.

Peoria's battery of great wholesale houses — several modern warehouses and perfectly constructed and appointed office buildings.

Take a ride through five miles of retail district and get a glimpse of the busy wholesale thoroughfares—Washington and Water streets.

See Peoria Lake, famed for world power boat records, the mecca for canoeists and oarsmen.

View the busy city, nestled in the valley, from Moss Avenue and High Street.

Promenade the white loop district. The installation of ornamental electric lamp standards in the business and a portion of the residence sections of Peoria, marks new boundaries. It is appropriately called the "white loop district."

THE MEDICAL SCHOOL OF THE UNIVERSITY
OF ILLINOIS

CHICAGO, Feb. 26, 1913.

To the Editor:—At the last meeting of the Society, resolutions were passed pledging the Society to the policy of adequate appropriation for the development by the State University of the work in public health, medical research and medical education and authorizing the appointment of a committee consisting of one from each county to urge on public attention, on the legislature and on the University authorities the necessity of making adequate provision for this need.

In accordance with this action, on the first of December President Nickerson appointed a committee which has since been busy in carrying out the work assigned to it by the resolutions of the Society. At the time of the adoption of the resolution the University had no medical department. The College of Physicians and Surgeons, which had been the University medical department for many years in a contractual relation had separated from the University. There were then two problems, one that of securing a medical department and the other securing adequate appropriation for it. It seemed evident that the resolution did not authorize the committee to favor any particular plan of a medical department nor any particular location for it. Whether the department should be in Urbana or in Chicago, or whether the University should build up from the ground a new school or acquire by donation or purchase a going institution was not specified directly or implied. Your committee assumed that any plan adopted by the Trustees of the University should receive its endorsement.

Last fall a committee acting for the alumni of the former medical department of the University, proposed to the University trustees to secure a majority of the stock of the College of Physicians and Surgeons and donate it to the University. The trustees agreed to accept the gift of all the stock of the college if that could be secured before Feb. 1, 1913. The alumni committee collected about \$30,000 with which it purchased the stock that was not donated and thus secured the whole amount and turned it over to the trustees on January 30. Later the trustees accepted the deed of the school, took possession and made provision for continuing the work till the close of the present school year.

As the University now has a real medical department which is under its absolute control it was only necessary for your committee to assist in securing adequate appropriation for its support. All members of the committee have been requested to see the legislators from their own districts and get from them a promise to support the appropriation when the bill came up. Many of the members of the legislature have been seen already and the great majority interviewed have agreed to favor the principle of adequate support of a medical department for teaching and research.

The trustees intend to ask the legislature for an appropriation of \$250,000 for two years, that is, \$125,000 annually. This amount will be needed to make adequate provision for the reorganization of the teaching that will be required to put the school at once on the highest plane. Undoubtedly provision will be made to meet the demand for trained public health officers, for medical research and for the best training of medical students. The money is already in the University fund supplied by the mill tax. No new appropriation will be needed, but the consent of the legislature is necessary to the use of the fund for the support of a medical department.

The committee has met hearty support from the profession and the laity. The alumni of the University have aided in purchasing the college for the University and are now working through a committee for the appropriation. The support of the press is assured. Many county medical societies throughout the state have endorsed the movement. The most prominent members of the faculties of Rush and Northwestern medical schools have signed a statement approving the maintenance by the state of a medical school of the highest rank and which shall also provide research laboratories for the advancement of the knowledge that will aid in the prevention and curing of disease and asserting that such an institution is deserving of a measure of support commensurate with the importance of its aim and with the wealth and dignity of the state.

There will be opposition. Some or all of the low grade medical schools may oppose the appropriation, fearing that the establishment by the State University of a high-standard school may lead to a general forced increase in the standards of all medical schools. They are the institutions that may claim that the state need not engage in medical teaching because other schools provide sufficient opportunity for all who may wish to study medicine. Of course the same objection could be made to schools of engineering, law, etc. The state has greater reason for providing teaching in medicine and sanitation than in engineering. This is now recognized by twenty-five states which have established medical schools.

There may be some opposition from osteopaths and other irregular practitioners as well as from Christian Science healers. Whatever is of value in any method of treatment will be recognized and provision made in the state school for its development and teaching. This will remove all ground from under the feet of sectarians.

The committee is very desirous of the hearty cooperation of all physicians of the state. This is the best opportunity for putting Illinois in the lead in medicine that has ever presented. The committee hopes that every member of the state society will make an effort to get the support of the members of the legislature to an adequate appropriation for the maintenance of the medical school of the State University.

C. S. BACON, Chairman.

STATE UNIVERSITY MEDICAL SCHOOL COMMITTEE

Committeeman and County

C. A. Wells, Quincy—Adams.
 J. W. Dunn, Cairo—Alexander.
 Willis Butterfield, Belvidere—Boone.
 E. S. Clark, Greenville—Bond.
 William Parker, Mt. Sterling—Brown.
 W. L. Linabery, Princeton—Bureau.
 J. H. Peisker, Kampsville—Calhoun.
 R. C. Miller, Shannon—Carroll.
 J. A. McGee, Virginia—Cass.
 W. K. Newcomb, Champaign—Champaign.
 G. L. Armstrong, Taylorville—Christian.
 L. J. Weir, Marshall—Clark.
 Geo. W. Steeley, Louisville—Clay.
 J. C. Klutho, Breese—Clintou.
 J. G. Baker, Mattoon—Coles.
 C. S. Bacon, Chicago—Cook.
 A. L. Lowe, Robinson—Crawford.
 R. L. Kurtz, Neoga—Cumberland.
 C. H. Mordoff, Genoa—DeKalb.
 Geo. S. Edmundson, Clinton—Dewitt.
 Walter C. Blaine, Tuscola—Douglas.
 Geo. H. Hunt, Paris—Edgar.
 W. E. Buxton, West Salem—Edwards.
 Frank Buckmaster, Effingham—Effingham.
 A. L. T. Williams, Vandalia—Fayette.
 Walter H. Alvis, Benton—Franklin.
 V. C. Murphy, Cuba—Fulton.
 J. W. Bowling, Shawneetown—Gallatin.
 H. W. Smith, Roodhouse—Greene.
 H. M. Ferguson, Morris—Grundy.
 W. W. Hall, McLeansboro—Hamilton.
 C. L. Ferris, Carthage—Hancock.
 F. M. Fowler, Elizabethtown—Hardin.
 J. P. Riggs, Media—Henderson.
 J. A. Kirkland, Cambridge—Henry.
 R. E. McKenzie, Iroquois—Ford.
 J. T. McAnnally, Carbondale—Jackson.
 James P. Prestley, Newton—Jasper.
 Andy Hall, Mt. Vernon—Jefferson.
 A. M. Cheney, Jerseyville—Jersey.
 D. G. Smith, Elizabeth—Jo Daviess.
 A. I. Brown, Vienna—Johnson.
 Geo. F. Allen, Aurora—Kane.
 A. A. Lowenthal, Kankakee—Kankakee.
 R. A. McClelland, Yorkville—Kendall.
 C. B. Horrell, Galesburg—Knox.
 H. B. Roberts, Highland Park—Lake.
 J. W. Pettit, Ottawa—La Salle.
 J. B. Bryant, Lawrenceville—Lawrence.
 E. A. Sullivan, Amboy—Lee.

Committeeman and County

John Ross, Pontiac—Livington.
 H. S. Oyler, Lincoln—Logan.
 Everett J. Brown, Decatur—Macon.
 E. W. Flegenbaum, Edwardsville—Madison.
 W. D. Richardson, Centralia—Mariou.
 L. B. Elliston, Magnolia—Marshall-Putnam.
 F. F. Garrison, Havana—Mason.
 J. A. Helm, Metropolis—Massac.
 S. C. Stremmel, Macomb—McDonough.
 James I. Wernham, Marengo—McHenry.
 W. H. Gardner, Bloomington—McLean.
 T. W. Morgan, Virden—Macoupin.
 Irving Newcomber, Petersburg—Menard.
 A. N. Mackey, Aledo—Mercer.
 Louis Adelsberger, Waterloo—Monroe.
 Harry Bennett, Litchfield—Montgomery.
 Carl E. Black, Jacksonville—Morgan.
 W. P. Davidson, Sullivan—Moultrie.
 H. H. Sheets, Oregon—Ogle.
 George W. Parker, Peoria—Peoria.
 Max Adles, Duquoin—Perry.
 B. L. Barker, Monticello—Piatt.
 H. P. T. Duffield, Pittsfield—Pike.
 W. A. Sims, Golconda—Pope.
 Hall Whitaker, Mound City—Pulaski.
 James W. Weir, Sparta—Randolph.
 H. T. Watkins, Olney—Richland.
 J. R. Hollowbush, Rock Island—Rock Island.
 F. E. Auton, Belleville—St. Clair.
 O. N. Gibson, Eldorado—Saline.
 L. C. Taylor, Springfield—Sangamon.
 W. F. Harvey, Rushville—Schuyler.
 H. H. Fletcher, Winchester—Scott.
 F. P. Auld, Shelbyville—Shelby.
 M. T. Ward, Toulon—Stark.
 J. H. Stealy, Freeport—Stephenson.
 H. L. Yoder, Morton—Tazewell.
 T. B. Goodman, Cobden—Union.
 S. C. Glidden, Danville—Vermilion.
 S. W. Schneck, Mt. Carmel—Wabash.
 W. H. Wells, Monmouth—Warren.
 J. J. Trout, Nashville—Washington.
 J. D. Harlan, Fairfield—Wayne.
 John Niess, Carmi—White.
 C. E. Parker, Sterling—Whiteside.
 H. W. Woodruff, Joliet—Will.
 J. G. Parmley, Marion—Williamson.
 T. H. Culhane, Rockford—Winnebago.
 H. A. Millard, Minonk—Woodford.

COMMENDS ATTENTION TO DIRECTORIES

PEORIA, ILL., Feb. 12, 1913.

To the Editor:--Your editorial in the February issue of the JOURNAL on "Irregulars in Directories" is timely, as you will find in looking over any directory among the classified list, a heterogeneous lot of pseudo-professional men among the list of physicians. Here in Peoria there were telephone lists and city directories that included everything in their classified physicians, regardless of where they originated as long as the public conferred the title.

The Peoria County Medical Society now has a committee on directories; in fact, they are permanently appointed to look after all such conditions. This committee has found that there is no trouble in getting

cooperation from the various concerns issuing directories, and they are very willing to do the right thing, *provided* they are furnished from time to time with *corrected* and revised lists to guide them in their lists. Here the committee at first received a revised list of practitioners from the State Board of Health, so that they knew who the legally registered physicians were. After revising this list with the kind help of our active secretary of the local association, there was a corrected list that was presented to the various directory managers. They seemed pleased and said it helped them very much, from the fact that it came from headquarters, so to speak, and that they certainly would abide by it in the future.

J. E. HUBER, M.D.

RAYNAUD'S DISEASE

February 13, 1913.

To the Editor:—The paper on Raynaud's disease under thymic treatment is the actual result of experimental work in the field of internal secretions in which I am working as a research scholar.

Similar experiments are now in operation on cases of rheumatoid arthritis and other vascular disorders. The article is short and I trust you can give it the little space that it will require, at an early date.

Very truly,

S. E. SOMMER.

RAYNAUD'S DISEASE TREATED WITH THYMUS SUBSTANCE

SYLVAN E. SOMMER

Research Student "Internal Secretions," Northwestern University

CHICAGO

J. F. M., male, aged 31 years, living in southeastern Iowa, has suffered for four consecutive years from a typical case of Raynaud's disease. In the fall of 1909, when the outside temperature averaged 45 degrees, he suffered from innumerable chills and was greatly annoyed by cold and numb sensation in his hands and feet.

Later in the winter his hands became swollen and red and cracked open while his feet bothered to such an extent that for weeks at a time he was confined in bed. His case was diagnosed as one of a rheumatic condition and he consumed large quantities of oil of wintergreen and potassium iodid to no avail. Warm weather brought a cessation of the condition. In 1910 the condition returned and he went to Hot Springs for the winter, the warm climate giving him relief.

In 1911 the first sign of the recurrence of the disease was severe pain in the lobe of his left ear which was cold, white and numb; this was October 15. The skin began to necrose and crumble away and by November 1 the lobe had sloughed away. The line of demarkation healed rapidly and aside from an intermittent tingling sensation in the ear and the usual numbness of his feet, the condition, now diagnosed as Raynaud's disease, displayed no progressive tendency.

Last winter he lost the first joint of the index finger of his right hand in a manner identical to the gangrenous loss of the ear lobe. A trip to West Baden gave no relief, and the elimination of proteins from his diet produced no beneficial results. Electric massage and application of cold salt water gave temporary relief.

Last fall he went to Palm Beach but returned the last of November, immediately suffering a return of his ailment. On coming to Chicago he offered himself as an experiment to a treatment with secretions from ductless glands.

His hands were cracked and swollen, feet were blue-white and cold. The skin of his face appeared dry and chapped; altogether he gave the appearance of one with very poor circulation. On examination it was found that his blood-pressure was low, red corpuscle count 4,715,000, white count, 9,540.

Suprarenal extract was used for three weeks and but little effect was noted. Deciding that a slower and more synthetic stimulation to the vascular system was needed, I began to use thymus substance. At first he received the desiccated (Armour's) substance in 3 grain doses, three times daily for a week. The second week the amount was increased to 5 grains three times a day and the third week he received 24 grains a day. At the end of the sixth week he took the substance on alternate days and has shown remarkable improvement.

Both the patient and his physician are enthusiastic over the test, as the numb condition has left, he has gained three and one-half pounds and his face shows some color. By the use of elastic stockings he is walking without a cane and is showing every sign of continued improvement.

Definite conclusions cannot be drawn from the results of a single case, but I believe that thymus extract should be tried in all cases of vascular or metabolic disorders.

844 Leland Avenue.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY

The Adams County Medical Society entertained three guests at the February meeting; they were: Dr. Lewis W. Bremerman, Chicago, Mr. F. V. Cargill, organizer for the A. M. A., and Professor Jordan, bacteriologist of Chicago. Quincy is the victim of a severe epidemic of typhoid fever and Professor Jordan was here examining the city water, to determine whether or not it was responsible for the spread of the disease.

Routine business was transacted. Five applicants for membership were read and ordered to take the regular course. Dr. H. T. Duffield of Pittsfield, who addressed the society at its January meeting was elected to honorary membership.

Mr. F. V. Cargill, one of the state organizers, gave a very interesting talk to the members and made us feel that Illinois will succeed in gaining 1,286 new members and probably more.

In the afternoon Dr. Bremerman addressed the society on "Hypertrophy of the Prostate." The doctor is an authority in his line and he proved this by the able manner in which he handled his subject. About three years ago the doctor perfected an apparatus for use in operations on the prostate gland. However, he is not satisfied with this, but is working on another one, which will be controlled by electricity, and which if successful will be a wonderful piece of mechanism.

The members showed their appreciation by electing Dr. Bremerman to honorary membership and giving him a rising vote of thanks. In the evening a large audience listened to a public lecture on "What Should be Taught the Boy Regarding Sexual Hygiene," by Dr. Bremerman.

CHAMPAIGN COUNTY

Dr. Nickerson read a paper on "Lobar Pneumonia" at the January meeting of this society, which contained many practical points and created great interest. The discussion which followed certainly carried out President Gulick's suggestion that the most valuable phase of a medical meeting is the exchange of ideas and experiences. The treatment of pneumonia was the principal part of the paper discussed and the old and new methods were compared. Every one present appreciated the ideas and experiences along this line related by the older men. They can certainly prove their claim of having had as low mortality 40 years ago as any one has to-day. Dr. Bartholow called the coal tar products wicked. All those who had themselves been attacked by pneumonia were decidedly opposed to the practice some physicians make of keeping pneumonia patients in the open air in severe weather. They also spoke with gratitude of a few doses of some safe anodyne to relieve the pain and general distress of the onset and declared their confidence in the good results of treatment when it is carefully and intelligently given, as against the idea so broadly published of those physicians who claim that drugs are of little use. The false notions acquired by outside people over this one thing was deprecated.

Close watching and frequent careful examinations—two or three times daily—are more necessary to an intelligent view of pneumonia, with its great toxemia, rapid development and tendency to sudden change of manifestations, than in almost any other disease.

Dr. Nickerson also gave a stirring talk on the benefits of organization and indeed the necessity for it. We hope that he will achieve his ambition of making Illinois the first state in the Union in the number of doctors having membership in the medical societies.

For the business meeting only eight remained and before everything had been given attention some of the members had to leave. The meeting had to be concluded because of the lack of a quorum although there were important matters awaiting attention and decision of the society.

Dr. Horace W. Miller, of Urbana, was elected to membership. This was a very choice meeting. Besides the president of the state medical society we had our ex-president of the society, several of our own ex-presidents, Dr. Cooley of Danville, the councilor of this district and Dr. Champion, of Mansfield.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting Dec. 11, 1912

A regular meeting of the Chicago Medical Society was held Dec. 11, 1912, with the following program:

1. "Treatment of the Advanced Consumptive," Ethan A. Gray.
2. "Personal Cleanliness as a Factor in Public Health." Adolph Gehrmann.
3. "Tubercle Toxins and Their Clinical Manifestations," Orville W. McMichael.

Regular Meeting Dec. 18, 1912

A regular meeting of the Chicago Medical Society was held Dec. 18, 1912. The program consisted of the following addresses:

1. "Opportunities for the Preservation of Hearing" (by invitation), W. Sohler Bryant, New York.
2. "The State Care and Education of the Cripples and Deformed" (by invitation), H. Winnett Orr, Lincoln, Neb.
3. "Diagnostic Features of Osteitis Fibrosa, Bone Cyst and Some Other Intra-Osseous Lesions," illustrated by stereopticon (by invitation), A. H. Freiberg, Cincinnati, Ohio.

4. "The Operative Treatment of Paralytic Deformities of the Feet," illustrated by stereopticon (by invitation), John Prentiss Lord, Omaha, Neb.

December 25, no meeting.

January 1, 1913, no meeting.

Regular Meeting, Jan. 8, 1913

A regular meeting of the Chicago Medical Society was held Jan. 8, 1913, with the following program:

1. "The Anatomy and Repair of the Female Perineum," William Cuthbertson.
2. "Pott's Fracture," E. M. Brown.

Regular Meeting, Jan. 15, 1913

A regular meeting of the Chicago Medical Society was held January 15, with the following program:

1. "Report of Four Years' Work on Cancer," Thomas A. Hogan.
2. "The Use of Tuberculin in the Treatment of Genito-Urinary Tuberculosis," Lewis Wine Bremerman.

Regular Meeting, Jan. 22, 1913

A regular meeting of the Chicago Medical Society was held Jan. 22, 1913. The program follows:

1. "Vaccine Treatment of Typhoid Fever" (by invitation), J. A. Witherspoon, Nashville, Tenn., president-elect American Medical Association.
2. "Practical Studies in Tuberculosis," Clarence L. Wheaton.

Regular Meeting, Jan. 29, 1913

A regular meeting of the Chicago Medical Society was held Jan. 29, 1913, with the following program:

1. "Hernia in Children," Albert J. Ochsner.
2. "When is Operative Treatment Indicated in Chronic Dyspepsia?" (by invitation), William H. Wathen, Louisville, Ky.

*CHICAGO MEDICAL SOCIETY, ENGLEWOOD BRANCH**Regular Meeting, Feb. 4, 1913*

The February meeting of the Englewood Branch was held on the evening of February 4, at the Englewood Hospital. The first paper was on the subject of "Hospital Pus Service," by Dr. Philip H. Holmes, who treated the subject in a thorough and able manner, bringing out many valuable and timely suggestions.

The discussion was opened by Drs. Louis A. Greensfelder and Wm. Fuller. Dr. Fuller advocated segregation and described very entertainingly the plan followed by a hospital in Havana where pus cases are treated in a detached building and before being admitted they are taken in an out-room, all clothing removed, which is sterilized, wrapped and labeled. The patient is given a bath and is brought into the hospital as clean as possible. Dr. F. C. Eggert and others entered into the discussion and brought out good points.

Dr. P. Z. McDonald read a most interesting paper on "Injuries to the Lung and Pleura." He presented a case in which a knife blade had penetrated the chest wall a little to the left and below the heart, broken off and fallen into the pleural cavity. Dr. C. A. Stevens showed x-ray pictures of the same and described his operative procedure. Dr. G. J. Hagens gave the histories of two interesting cases showing reverse symptoms. Dr. H. H. Mather, Wm. Fuller and others recited interesting cases. Considering the cold night the attendance of 39 was good.

CRAWFORD COUNTY

The regular meeting of the Crawford County Medical Society was held in the parlor of the Colonial Hotel, at Oblong, Jan. 9, 1913.

Before the meeting convened the members of the society dined together at the hotel and a very enjoyable time was had. After dinner the meeting was called to order by the president, the minutes of the previous meeting were read and approved.

The following members were present: Drs. Mitchell, Price, Dunham, Carlisle, Wilson, Newlin, H. N. Rafferty and Lowe.

No action was taken upon the application of G. F. Smith of West York. The first paper on the program was "Scarlet Fever," by Dr. Carlisle, the paper being very well prepared, interesting and very instructive; on motion duly seconded and carried the paper was received by the society for discussion which was led by Dr. Newlin and freely engaged in by all the members. Many important points were brought out in the discussion, especial stress being laid on the length of time necessary for maintaining the quarantine. This was followed by a paper, "Some of the Things I have learned about Blood-Pressure," by Dr. Kirk. The paper was an excellent one, the writer giving some of his own as well as other observations gained by taking the blood-pressure. Moved, seconded, and carried, that the paper be received by the society for discussion. The discussion was led by Dr. Firebaugh and was discussed to some length by the various members.

The business of the society was then taken up; it was moved, seconded and carried that the secretary get further information concerning the speaker on Sex Hygiene and report at the next meeting. A resolution that a vote of thanks be given the proprietor of the hotel for his generosity in donating the use of the room to the society was unanimously carried.

Dr. Rafferty presented a specimen showing the fimbriated ends of both tubes completely occluded and the ovaries in a state of cystic degeneration, the condition of the tubes probably being due to a specific infection. After some discussion as to the place for holding the next meeting (March) Robinson was decided on as being the place most conveniently reached. There being no further business, upon motion duly seconded and carried the society was adjourned.

A. LYMAN LOWE, Secretary.

JEFFERSON COUNTY

The Jefferson County Medical Society met in regular session at the Elks Hall at 5 p. m., Jan. 30, 1913.

The meeting was called to order by the president, Dr. Gilmore, with the following members present: J. T. Whitlock, Andy Hall, Harl Gee, Geo. Tupper, Chas. Hall, R. R. Smith, H. T. Levick, J. W. Hamilton, T. A. Clark, Osear Cull, L. C. Morgan, O. A. Suttle, T. P. Ward, and C. J. Poole, Dr. King of Bellerive and Dr. Stone of Mt. Vernon were visiting guests of the society.

Dr. Andy Hall read an interesting paper on "Hereditary Diseases and Defects" which was discussed by Drs. Tupper, Hamilton and Gee and closed by Dr. Hall. During the discussion of Dr. Hall's paper a communication from the state secretary regarding a public meeting for Sex Hygiene was read by the secretary. The following resolution was introduced by Dr. Andy Hall:

WHEREAS, We believe that the indiscriminate mating of people suffering from certain diseases, physical disabilities, mental defects, vicious habits and inherent tendencies has not only been the cause of much suffering and unhappiness in the world, but that it has had much to do with burdening society with an army of blind, insane, epileptics, feeble-minded, imbeciles, alcoholics and criminals; in theory, in practice, in economy and morals it is wrong to legalize the marriage of our physical, mental and moral delinquents. Therefore,

Resolved, That we, the members of the Jefferson County Medical Society, recommend that the members of our legislature use their influence to throw such restrictions around our marriage laws as will permit a license being issued only to those fit mentally, physically, and morally.

On motion by Dr. Tupper the secretary was instructed to communicate with Secretary Weis and secure a speaker on the subject and to forward a copy of the resolutions introduced by Dr. Hall to our Senator and the three Representatives; also a copy of the proceedings of the meeting to the ILLINOIS MEDICAL JOURNAL for publication.

Dr. J. W. Hamilton gave an interesting address on the subject of "Blood-Pressure," after which the meeting adjourned.

After adjournment the members of the Jefferson County Medical Society and their guests went to Manion's Cafe, where a banquet was served.

C. J. POOLE, Secretary.

JO DAVIESS COUNTY.

The Jo Daviess Co. Medical Society held its annual meeting at Stockton, Jan. 23, 1913. At 11 a. m. the meeting was called to order in the parlors of Ray's Hotel. In the absence of the president and the vice-president, Dr. S. G. Kreeder was elected president pro tempore. The following answered to the roll call: Bench, Smith, I. C., Kreeder, Nadig, Kaa, Smith D. G., Stafford, Dalamore, Fleege, Hoffman, Stealy, Clark, and F. E. Hagie of Elizabeth as visitor. Applications were received from E. F. Gallabith Hanover; R. E. Logan, Scales Mound; and F. E. Hagie, Elizabeth.

The auditing committee reported a balance in hands of the treasurer of \$17.44. The committee to divide the county members into entertainment divisions reported as follows: Galena Division: Godfrey, Bench, Fleege, Dalamore, Miller, Hoffman and W. A. Smith. Warren Division: Keller, Bucknam, Renwick, Hillard, Lewis, U. S., Czybulka. A communication from Harold N. Moyer was read concerning the defense fund and after some discussion it was unanimously decided that the

Society was agreed to be taxed to whatever amount was necessary to put this matter on a sound basis.

The election of officers* was next to follow and resulted in the following: president, I. C. Smith; vice-president, U. S. G. Keller; secretary and treasurer, D. G. Smith; censors, S. G. Kreider for three years, F. H. Fleege for two years, A. T. Nadig for one year; delegate to state meeting, D. G. Smith; alternate, E. M. Bench.

Dr. J. F. Dalmore then read a paper on "Physical Signs of Aortic Incompetency," and Dr. A. T. Nadig read a paper on "Etiology of Acute Tonsillitis with Involvement of the middle ear from the family doctor's standpoint." The secretary read a paper on "The Medical Profession and the Business Side of It as It Stands To-day."

Dr. Stealy of Freeport, the Councilor for this district, was present and was kind enough to read a paper on "Vaccine Therapy," illustrated with stereopticon slides, which taught when vaccine and when serum should be used. The society adjourned to meet in Elizabeth in April.

D. G. SMITH.

MACOUPIN COUNTY

The regular January meeting of the Macoupin County Medical Society was held in the office of Dr. Matthews, Carlinville, Ill., Jan. 28, 1913. The meeting was called to order by Dr. T. W. Morgan, president. Dr. J. N. English was appointed to act as secretary.

Those present were Drs. T. W. Morgan, T. H. Hall, C. D. King, E. B. Hobson, J. P. Matthews, J. N. English, L. H. Corr, J. B. Liston, E. B. Motley, L. H. Deany, F. A. Renner, J. A. Collins, J. H. Davis, and Mr. F. V. Cargill of Chicago, organizer for the A. M. A.

The following applications for membership were received and referred to the Board of Censors: R. E. Bley, Jr., Bunker Hill; F. B. Van Wormer, Gillespie; Wm. L. McBrien, Staunton; S. M. Blunk, Virden; E. R. Van Meter, Staunton. (While yet in County but after the meeting Mr. Cargill received four more applications.)

Dr. Charles D. King of Gillespie was elected secretary to fill the unexpired term of Dr. Doan, resigned. The Board of Censors reported favorably on applications of Drs. Hankins of Carlinville, and Crum of Palmyra, and they were duly elected to membership.

Dr. J. P. Matthews reported a case—Cerebral Embolism in man aged 75—an elaborate extempore description of anatomic and pathologic conditions. A lively discussion followed.

Dr. Morgan because of unavoidable absence of society's records gave a brief verbal account of the recent Palmyra meeting. Staunton was selected as next meeting place.

Dr. Renner of Benld, gave the history of a malpractice suit now pending. Discussion by members. The secretary was directed to write a letter to Dr. Doan, late secretary, thanking him for past services rendered and wishing him a speedy recovery and restoration in our midst. Resolutions of respect to the memory of the late Dr. Wm. M. Gross were adopted. There being no further business, the society adjourned.

MADISON COUNTY

The January meeting of this society was held in Granite City, on January 3, and was the first meeting under the leadership of our new president, Dr. Mather Pfeifferberger, of Alton. There was a large and enthusiastic attendance and it was a fine beginning for the new year. Dr. R. W. Binney of Granite City, who had just returned from the Clinical Congress of Surgeons of North America, gave us a paper containing echoes of that remarkable meeting, dealing particularly with "Lane's Kink" and other colonic obstructions, so successfully treated by this renowned London surgeon. The paper was an interesting and instructive one and

called out an animated discussion. Visitors present: Dr. R. E. Wobus, of St. Louis and Mr. F. V. Cargill of Chicago. The latter is a representative of the A. M. A., and is calling on non-members in the interest of our organization. Two new members were admitted, Dr. Edward P. Fischer, of Alton and Dr. W. R. Smith of Granite City. The next meeting will be held in Edwardsville, on Friday, Feb. 7, 1913.

M'LEAN COUNTY

The January meeting of this society was a notable one. Dr. Clara H. Town of the Lincoln State School and Colony was present and made the address of the evening, her subject being the "Study and Mental Classification of Children." The address was a very clear presentation of the methods used in studying backward and defective children, in classifying them, and in endeavoring to better their condition by special instruction and training. Dr. Town is a very entertaining and interesting speaker, as well as an experimental psychologist of large experience, and her talk was greatly enjoyed by all present. The speaker told of her work among the unfortunates in the state institutions, and of the system of Simon and Binet, by means of which the mental classification is made.

An actual demonstration of the method was made on two children, one an exceedingly bright child and the other a backward and defective. The contrast in the manner in which these two children responded to the tests was very remarkable.

The meeting was thoroughly enjoyed not only by the members of the society who were present, but also by many others interested in child welfare. After the address and demonstration an interesting discussion took place in which many not members of the society took part.

The following members were elected to membership: Drs. F. P. Setdem, Saybrook; Charles Hamilton, Carlock; Thomas Moate, Gridley; J. N. Thresh, Dauvers; C. M. Clifford, LeRoy; W. E. Neiberger, Bloomington; A. J. Morris, Bloomington and Joseph Hallet, Bloomington.

MORGAN COUNTY

Thursday, January 24, at the solicitation of the secretary of the Medical Library Association, Dr. Carl E. Black, Dr. Jesse S. Myer of St. Louis, portrayed in a public lecture with stereopticon, the principal characteristics and events in the life of William Beaumont together with his relations with his remarkable patient, Alexis St. Martin whose gastric fistula has become historic.

Dr. Myer's presentation was intensely interesting. Preceding the lecture an informal dinner occurred at the Peacock Inn, at which Dr. and Mrs. T. J. Pitner, Dr. and Mrs. D. W. Reid, Dr. and Mrs. A. L. Adams, Dr. and Mrs. Carl E. Black, Dr. and Mrs. George Stacy, Dr. and Mrs. Charles E. Cole, Drs. Virginia Dinsmore, Josephine Milligan and Grace Dewey, T. O. Hardesty, T. A. Wakely, Miss Ella B. Lawrence, were present, together with Dr. Myer.

The regular meeting was held Thursday, February 13, at the Medical Library. Dr. F. A. Norris presiding. Members present: Black, Blair, Cole, Crouch, Dewey, Gregory, Hairgrove, Milligan, Norris, Ogram, Stacy, Woltman. Guests present: L. J. Harvey, Griggsville; J. M. Wolf, Jacksonville and H. A. Haskell, Lynville. Members elected: Dr. H. A. Haskell, Lynville, and Dr. J. M. Wolf, Jacksonville. Members proposed: Emanuel Sipes, Jacksonville; J. H. Spencer and J. K. Elder, Murrayville, R. R. Jones, Woodson; T. M. Roberts, Chapin; M. F. Woods, Waverly.

Dr. Charles E. Cole and Grace Dewey presented clinical and laboratory data necessary to support a diagnosis of consumption. Dr. Cole took up the methods, examinations and symptoms that were chiefly depended on by examiners in making diagnosis in the past and present.

He also laid stress on the findings in obscure cases, some points of which were as follows: value of hemorrhage; a rise of temperature with slow return to normal; localized muscle rigidity; lagging; local tenderness; limited downward

excursion; unilateral limitation by measurement; increased pulse rate; pallor of the mucous membranes; ease of fatigue; sensitiveness to cold with subnormal temperature in about one-half the cases; dwelt on the normal area of sub-resonance.

Dr. Dewey considered examination of the sputum by the antiformin method of liquefying it, centrifuging and then smearing and staining as a much better method than the ordinary smear; the presence of albumin in sputum too, is highly pathognomonic of tuberculosis; the *x*-ray has quite good results in differentiating tubercular lesions; cavities and nodules can be found and the extent of the process well seen in the radiographic picture; radiographic views of normal and tubercular chests were shown.

The report of the Librarian, Dr. Carl E. Black, for 1912 was read and showed the Library to be in a flourishing condition. The most notable change in method the last year has been the circulation of individually pasteboard bound journals among the subscribers from week to week. This has been a highly successful move in stimulating more general use of the library. Drs. H. C. Campbell, Josephine Milligan, C. E. Black and J. C. Wilson, of Philadelphia, have been donors to the library the past year.

Dr. Ludwig Hektoen of Chicago will give a lecture on "Milk Epidemics" at Jacksonville on March 8. The lecture was arranged for by the county chairman of the "Public Health Education" committee of the American Medical Association, with the local cooperation of the Morgan County Medical Society, the Anti-tuberculosis Society and the Woman's Club.

GEORGE STACY, M.D., Secretary.

PEORIA COUNTY

Regular Meeting, Jan. 21, 1913

Dr. H. M. Hayes presided at the meeting of January 21. Applications of Drs. E. C. DuMars and W. B. Corey were read and referred to the Board of Censors. Bills for printing amounting to \$22 were ordered paid. Dr. Allison asked for assessment of three dollars per member to take care of the State Society in May, believing a large portion of it would be rebated. Motion was made and carried that assessment be made. The auditing committee reported the secretary's books and accounts correct and in good order.

Dr. George Zeller then addressed the society on "The Evolution of Public Care of the Insane in Illinois," showing views of all the state institutions. Dr. Zeller is thoroughly familiar with the subject, from the coming of Dorothy Dix to Illinois and the establishment of the first many-storied castles, to the present day cottage type buildings, of which the Peoria State Hospital is so fine an example. He traced the immediate care of the insane patients from the days of chains and bars and straight jackets to the more humane methods of the 20th century; even the names of the institutions from "The ——— Lunatic Asylum" to "The State Hospital." We bespeak for Dr. Zeller a life long term as Bartonville's head.

Regular Meeting, Feb. 4, 1913

Dr. H. M. Hayes, president, presided at this meeting. With 42 members present the society enjoyed a very notable meeting. The application of Dr. R. A. DuMars was read and acted upon by the Board of Censors. He and Drs. E. C. DuMars, W. B. Corey and C. E. Rollins were unanimously elected to membership. Dr. Farnum moved that this society take a membership in the Peoria Child Welfare League and space in their *Bulletin* for our society notes, paying \$1.00 per month therefor. This motion carried.

A communication from Professor Packard of the Bradley Institute invited members to attend the meetings of the Illinois State Academy of Science to meet here soon. Then followed the lecture of Dr. D'Orsay Hecht, of Chicago, on "Ductless Glands and the Nervous System, from a Clinical View Point." The accompanying lantern-slide demonstration rendered the address practically a clinical lecture, and elicited the rapt attention of all present.

The Annual Banquet

The annual banquet of the Peoria City Medical Society was held February 7 at the Jefferson Hotel. About 60 members attended with their wives. Rev. William Shaw offered the invocation and Dr. Hayes, president of the society, acted as toastmaster. The program was delightful; papers were read by Mrs. (Dr.) Collins and Mrs. (Dr.) Roberts. Mrs. (Dr.) W. C. Williams gave a vocal selection accompanied by Mrs. (Dr.) C. B. Welton. Dr. George A. Zeller delivered an oration on "The Medical Men of To-Day."

Dr. Oscar Allen of Chillicothe delighted the audience with an original poem entitled "Tribe of Allen." Hon. George Fitch delivered an address on "Doctor Know About Me."

ROCK ISLAND COUNTY

The regular meeting of the Rock Island County Medical Society was called to order at the Manufacturers' Hotel, Moline, Tuesday evening, Feb. 11, 1913, by President Sargent. Minutes of December meeting were read and approved. Committee reports were received. The following resolutions were adopted.

WHEREAS, It has pleased God to call from us so suddenly our esteemed fellow practitioner, Dr. W. O. Beam; and

WHEREAS, The Rock Island County Medical Society feels the loss of Dr. Beam's association with the society and all its members; therefore be it

Resolved, That we hereby wish to express our sympathy to Mrs. Beam and other members of his family and be it

Resolved, That a copy of this expression of our sympathy be spread on the minutes of this society and that a copy be sent to the doctor's family.

Signed

E. M. SALA, M.D.

HENRY BENNETT, M.D.

Committee.

The druggists' get-together meeting project was tabled for the present. Dr. Esther Hart Stone, Watertown, was unanimously elected to membership. Drs. A. E. Kohler, W. R. Freek, J. M. O. Bruner, and J. P. Comegys reported reinstated in membership upon payment of arrearage dues. Membership applications presented by Drs. W. A. Crooks, Watertown, E. D. Taylor, L. D. Barding, and Alexander Craig, East Moline; committee, Drs. Love, Donahoo and Williams appointed to investigate each. Committee, Drs. Sala and Bennett, appointed to draft resolutions covering the death of Dr. Wm. M. Patton. Request from Mrs. Mary S. Huntoon that the society endorse a candidate for Hospital Superintendency appointment by Gov. Dunne was filed after discussion. Various communications read and filed. Letter from the office of Dr. H. N. Moyer, chairman of the Medico-Legal Committee of Illinois Medical Society, was read and appended resolutions adopted to cover. A proposed amendment to by-laws was read and laid over until April, proposition reading that Chapter Five, Section 1, be changed to read, "Annual dues shall be Five Dollars," with the remainder of the section unchanged. Bills allowed: New Harper Hotel Co., \$27.00; Secretary's expense account first half year, \$7.30. No printer's bill was presented for this meeting, the announcement bulletin having paid its own bill. Drs. Littig and Pettit were tendered a rising vote of thanks. The program was in every way good; we accept it as the best of the year. Members present, 26; Leipold, Norman, Rochow, Ellingsworth, Love, Donahoo, Smith, Foster, Myers J. F., Sala, Winsor, Peterson, Otis, Sargent, Beam, Mueller, Williams, Snively, Rinehart, Chapman, Gambill, Hawley, Seids, First, Bennett, Bernhardt Sr. Visitors 5; J. W. Pettit, L. W. Littig, Love, Ross, Barding. Adjourned until April.

W. D. CHAPMAN, Secretary.

SANGAMON COUNTY

The regular semi-monthly meeting of the Sangamon County Medical Society was held at the St. Nicholas Hotel, Monday evening, January 27, 1913. About thirty physicians sat down to the banquet, and were later addressed by Dr. L. H. A. Nickerson, president of the State Society, and Dr. William Engelbach of St. Louis, who spoke on the "Diagnosis of Tuberculosis."

UNION COUNTY

At the regular monthly meeting of the Union County Medical Society held Jan. 29, 1913, the following officers were elected: president, A. J. Lyerly, Jonesboro; vice-president, K. D. Sanders, Jonesboro; secretary-treasurer, E. V. Hale, Anna; delegate, E. V. Hale, Anna.; alternate, A. J. Lyerly, Jonesboro; censors, S. C. Martin, A. J. Lyerly and J. J. Lence.

WINNEBAGO COUNTY

The Winnebago County Medical Society met in annual meeting at the Nelson Hotel, Rockford, Jan. 14, 1913. The meeting was brought to order by Dr. Lichty, the president. About 25 members were present. The annual election resulted as follows: president, Dr. Emil Lofgren, vice-president, Dr. L. C. Scott, and secretary-treasurer, Dr. C. M. Ransom, all of Rockford; censor for three years, Dr. David B. Penniman, Argyle.

The program consisted of short talks by the following members on the work of the last year: Dr. Tuite, "Vaccine Therapy;" Dr. Penniman, "Phylacogens;" Dr. Miller, "Pneumonia Treatment;" Dr. Allaben, "Reparation of Bones;" Dr. Bourland, "Fractures and Dislocations;" Dr. Walker, "Bronchopneumonia."

Discussions followed each talk. The outgoing president, Dr. Lichty, reviewed the work of the society for 1912, and complimented the society on the splendid programs presented, and urged further activity and interest in this direction.

Before the society adjourned the new president and secretary took their chairs. The retiring officers were given a vote of thanks for services rendered the society.

The society lost through death: Dr. Russell Broughton, April 4, 1912; Dr. Frank H. Jenks, Dec. 24, 1912.

The following moved: Dr. M. R. Barker to Wilmette; Dr. Deborah Doan to Excelsior Springs, Mo.; Dr. Guy J. Hall to Keokuk, Iowa; Dr. F. W. Nash, to Big Rock; Dr. A. Vanderhoof to Colorado Springs, Col.

The meeting of the Winnebago County Medical Society was held Feb. 11, 1913, at the Nelson House, Rockford, with Dr. Emil Lofgren of Rockford in the chair. About twenty members were present. Six doctors applied for membership in the society, their names being turned over to the Board of Censors for action.

Dr. Daniel Lichty read a biography of the late Dr. Frank H. Jenks, who died Dec. 24, 1912. The doctor had also offered the sincerest sympathy of the society to the afflicted family. It was moved that an engraved copy be sent to the family. Carried.

The program for the evening was on "Influenza." Dr. R. J. Porter spoke on the "Bacteriology and Pathology of the Disease." Dr. J. T. Culhane spoke on the "Medical and Surgical Complications."

The general discussion was very interesting and instructive. Everybody present took part.

Dr. A. C. Eakin described Dr. Roy Bernhardt's (of Chicago) method of treatment of paralytic conditions following infantile paralysis.

Dr. Lofgren and Dr. Wright were elected delegates to the state meeting at Peoria in May.

NEWS OF THE STATE

NEWS ITEMS

—The first meeting of the Tuberculosis Study Circle of the Chicago Tuberculosis Institute took place on February 11, at the City Club. Dr. H. Gideon Wells of the University of Chicago spoke on "Chemotherapy of Tuberculosis."

—Directors of the German Hospital of Chicago have opened up their new \$350,000 building at Hamilton Court and Grant Place. It will care for 150 patients. The old building will be demolished and the ground space used for a garden for convalescents.

—Dr. G. M. Walker of Charleston, accused of murder through an alleged criminal operation was discharged by Judge Thompson, February 4. The ruling of the court was based on a technical error of Judge Kimbrough, who presided at a former trial, in discharging the jury in the absence of the defendant or his attorneys.

—The Crane Company of Chicago has purchased forty-eight acres and the improvements known as the Buffalo Rock Sanitarium, on the Illinois River, four miles west of Ottawa, to make it a home for the recreation and recuperation of the employees of the concern needing the same. As there are over 5,000 employees in the Crane shops it is expected that a large institution will be maintained.

—Oscar Anderson of Chicago, working under the name of Andrus Solberg, was brought to trial in Fargo, N. D., for using the mails to defraud. At the inquisition it developed that he is a Scandinavian about 20 years old, of quiet demeanor and sallow complexion, and had sold a worthless preparation of rye and barley flour as a consumption cure. He supplied ninety packages of this medicine and treatment at a charge of \$20.

—Ten physicians located in various parts of Saline County have purchased the Harrisburg Sanitarium. They will add such improvements as are needed, and will make it one of the most modern in southern Illinois. The following are the physicians who have purchased the same: Drs. J. V. Capel, A. J. Butner, C. W. Turner, F. M. Hart, E. H. Lehman, E. W. Cummins and R. B. Nyberg, all of Harrisburg; F. L. Ozment of Ledford, Samuel Latham of Eldorado and R. G. Bond of Big Muddy.

—A society composed of representatives of eleven different organizations, whose purpose is the betterment of physical conditions in the city of Peoria, was regularly organized recently with the following officers: George J. Jochem, president; A. H. Hawley, vice-president, and Dr. E. W. Oliver, secretary and treasurer. The following organizations are represented in the league: Child's Welfare League, Peoria Association for

the Prevention of Tuberculosis, Associated Charities, Peoria Hebrew Relief Society, Peoria Trades and Labor Assembly, Order of Locomotive Firemen and Enginemen, German-American Alliance, Peoria Dental Society, Association of Commerce, Peoria City Medical Society and the Peoria Betterment Association.

—The following letter sent out by the Passavant Memorial Hospital of Jacksonville demonstrates the progressive spirit by making its laboratory facilities available for the local profession:

Dear Doctor.—We are anxious to make the service at Passavant Memorial Hospital, Jacksonville, Illinois, as complete as possible and after March 1, 1913, there will be free laboratory service by a competent pathologist for all resident hospital patients. The pathologist is Dr. Grace Dewey, who has had a laboratory at the hospital for some time and whose work in this department is unexcelled. This service will include examinations of urine and sputum, leukocyte count, red blood-count, hemoglobin estimate, Widal test, Neisser, diphtheria and malaria examination.

In November last a Giant Magnet was added to our equipment and we would remind you of the up-to-date *x-ray* machine which was installed in 1911, and which has already been very largely patronized by the profession. We have a constant exhibit of our *x-ray* plates which you are invited to inspect at any time.

Very truly yours

IDA B. VENNEN, Superintendent.

—The subject of medical examination of employees was discussed at a joint meeting of the Committee on Factories of the Chicago Tuberculosis Institute and representatives of various firms in this city, at the City Club, Chicago, Feb. 19, 1913.

It was universally agreed that the system of medical examination of the health of employees tends to production of greater efficiency on the part of the entire working force and especially benefits the employees by the detection of disease at the time when the disease is curable.

It is also the general sense of the meeting that a systematic medical supervision will be generally established.

One agency that will materially help to bring this about will be the extension of Employers' Liability Laws throughout the country.

There were representatives at this meeting to-day from the following firms:

International Harvester Company,
Sears, Roebuck & Company,
Chicago Telephone Company,
Montgomery Ward & Company,
Swift & Company,
Marshall Field & Company,
Mandel Brothers,
Hillman's,
Rothschild's,
The Fair,
C. B. & Q. R. R.,
Illinois Steel Company,
Hibbard, Spencer, Bartlett & Company,
Crane Company.

The Committee on Factories of the Chicago Tuberculosis Institute consists of Dr. Theodore B. Sachs, Chairman, Dr. Henry B. Favill, Mr. Sherman C. Kingsley and Mr. James Minnick, Secretary.

It is the intention of this Committee to hold regular monthly meetings with representatives of various firms. The next meeting will be held March 19, and subjects for discussion will be:

1. What constitutes an efficient medical examination?

2. What can be done for employees needing institutional care who cannot pay.

—The Chicago Tuberculosis Institute held its annual meeting at its office, 1012 Otis Building, Wednesday, January 29.

The Superintendent in his report called attention to the need of tuberculosis enterprises being in charge of experts, noting that in some instances incompetent persons launch enterprises and get more or less general support. At present, no less than three such enterprises dealing with tuberculosis, and country-wide in their efforts, are seeking support aggregating over \$12,000,000. Not one of these enterprises has connected with it any tuberculosis expert or even a business manager of recognized ability.

Speaking of the work of the institute, he called attention to the fact that its chief function is that of education. Regarding the work of the past year of 1912, he reported that the three most important activities of the Institute were:

1. Advocacy of a method of examination of employees in working places.

2. Campaign for better care of advanced cases in public institutions.

3. The creation of a traveling educational exhibit.

Other work referred to shows that all the summer schools, five of which schools having attendance of 148 children, were conducted in the summer of 1912 jointly with the permanent school extension committee, school board and the Municipal Tuberculosis Sanitarium. He emphasized the need of these summer outdoor schools because in many cases the children cannot make mental progress until special attention is given their physical health. The improvement in children of the summer schools shows what can be accomplished and the need of such work.

The Institute also assisted the Health Department in its campaign for a new milk ordinance.

Dr. O. W. McMichael, for the Educational Department, reported that the Institute distributed nearly 600,000 pieces of literature, and that the moving picture film, entitled, "On the Trail of the Germ," was displayed in 30,000 moving picture houses in the United States, and viewed by not less than 60,000,000 people; 28,000,000 having seen the film the first month it was produced.

Dr. Theodore B. Sachs, for the Sanatorium Department of the Institute, reported the success attending the efforts of the Edward Sanatorium at Naperville, laying special stress on the need of *early diagnosis in tuberculosis*.

Reviewing the work of the Edward Sanatorium covering a period of six years, he reported the following: Of the 693 patients discharged from the institution in that time, 351 were in the incipient stages on their admission. At present, 80.6 per cent. of these are in good health and have retained their working capacity, and as far as is known, only 3 per cent. have died. Of the 229 moderately advanced cases on their admission, only 38.4 per cent. have retained their working capacity, and 32.7 per cent. have died, showing that the *early diagnosis* in individual cases is the most important feature to bring about a cure and the restoration of the working power.

No matter what benefit may result from new methods in the manner of treating tuberculosis, the *early diagnosis of tuberculosis* will always be the most important factor.

The constitution of the Institute was amended, dividing the work among five departments, instead of four, as heretofore. The departments of the Institute, with their respective heads, are now as follows: 1. Exhibits, Mr. Geo. W. Perkins; 2. Literature, Dr. O. W. McMichael; 3. Lectures and Conferences, Dr. Jas. Alex. Harvey; 4. Research, Dr. Ethan A. Gray; 5. Institutions, Dr. Theodore B. Sachs.

The officers were re-elected, with the exception of Dr. Henry B. Favill, who declined to serve again as President of the Institute; so the officers elected for the ensuing year are as follows: Dr. Theodore B. Sachs, President; Dr. Frank Billings, First Vice-President; Dr. Robert H. Babcock, Second Vice-President; Mr. David R. Forgan, Treasurer; Mr. Sherman C. Kingsley, Secretary.

The financial report showed receipts of \$13,086.73 for the General Fund; \$36,755.21, Sanatorium Fund. The disbursements were, \$16,882.52, General Fund, and \$37,444.93, Sanatorium Fund.

The balances, cash on hand, Dec. 31, 1912, were: General Fund, \$4,707.58, and Sanatorium Fund, \$8,361.41.

JAMES MINNICK, Superintendent.

PERSONALS

Dr. R. L. Eddington of Bement has removed to Lacon.

Dr. A. F. Burnham of Mason City will remove to Peoria.

Dr. William O'Reilly has opened an office at Winchester, Ill.

Dr. George Fuller of Danville has removed to Los Angeles, Cal.

Dr. John J. McIntosh has removed from Allendale to Mt. Carmel.

Dr. T. W. Priest of Williamsville has sold out his practice to Dr. Shipman.

Dr. D. F. Duggan of Alton has been appointed surgeon of the A. J. & P. Railroad.

Dr. F. J. Corey of Chicago has associated himself with Dr. F. F. Garrison of Havana.

Dr. WeisheW of Chicago has located in Oswego, having bought the practice of L. C. Diddy.

Dr. J. T. Montgomery of Charleston has been elected President of the State Board of Agriculture.

Dr. Lewis of Tennessee, who had his leg broken in a runaway accident some time ago, is improving.

Dr. E. H. Hoffman of Foosland has sold his practice to Dr. Colwell of Oak Park, and will remove to Chicago.

Dr. S. B. Peacock of Baylis has purchased a home in Pittsfield, and with his wife will make that city his home.

Dr. F. F. Gayno of Seneca will remove to Belvidere and will enter into partnership with Dr. George C. Tallerday.

Dr. Sarah A. Noble, 6514 Ross Avenue, Chicago, has gone to Europe, where she will take up clinic work in London and Berlin.

Dr. R. V. Moore of Amboy has sold his practice to Dr. Dornblaser, who, with his wife, will soon take charge of the Amboy Hospital.

Dr. and Mrs. Frank W. Hanford of Rockford are spending the winter at Los Angeles, Cal., visiting points of interest via Sunset Route.

Dr. W. E. Sikes and family of Roscoe have removed to Freeport, where the Doctor will become connected with the sanitarium at that place.

Dr. George F. Butler, formerly county physician of Cook County, has been appointed Medical Director of Mudlavia, Kramer, Indiana.

Dr. S. C. Stanton of Chicago was named by Governor Deneen as Surgeon-General of the Illinois National Guard to succeed Dr. Chas. Adams.

Osteopath A. N. Oven of Mason City is touring the state in the interests of the Illinois State Osteopathic Association. Dr. Reynolds of Wayne, Neb., takes his place during his absence.

Dr. Alexander McCornack, house physician at Augustana Hospital, Chicago, who recently underwent an operation for hernia, will locate at Elgin, where he will be associated with his father, Dr. Edwin A. McCornack.

REMOVALS

Dr. F. L. Lingle from Alto Pass to Cobden.

Dr. J. K. Simmons has removed to Alto Pass.

Dr. L. J. May from Anna to address unknown.

Dr. D. W. Gear of Jonesboro has removed to Anna.

Dr. G. W. Heilig has removed from Mounds to Anna.

Dr. S. B. Morris has removed from McClure to Anna.

Dr. A. M. Shaw of Ottawa has removed to Osyka, Miss.

Dr. Aldora Tyler has removed from Clinton to Chicago.

Dr. T. LeAgnew has removed from Anna to St. Louis, Mo.

Dr. William O'Reilly has removed from Canton to Winchester.

Dr. LaFayette Green has removed from E. St. Louis to Buckner.

Dr. John N. Kramer has removed from Lebanon to New Athens.

Dr. G. W. Fuller has removed from Danville to Los Angeles, Cal.

Dr. William T. Bowman has removed from Lincoln to Greenvew.

Dr. B. Lenchen has removed from Anna to Chicago State Hospital.

Dr. G. L. McKinney has removed from New Douglas to Arcadia, Fla.

Dr. Ralph Herbert has removed from Poplar Grove to LaCrosse, Wis.

Dr. W. Gourley has removed from Downer's Grove to Sarasota, Fla.

PUBLIC HEALTH

—Dr. E. Mammen of Bloomington gave a health talk at the annual farmers institute at Pontiac, in which he took occasion to inculcate some good advice on pure water, fresh air and sunshine, and took a rap at the proprietary medicine dope and bad cooking on the farm.

—Small-pox has recently made its appearance in the country districts around Chicago. Inspectors sent from this Department report the following interesting facts with respect to the scattering of small-pox by a school teacher among her pupils.

PROOF THAT VACCINATION PROTECTS

Brothers and sister mingle while one has small-pox. The brother with small-pox never was vaccinated. The vaccinated children did not take small-pox.

From "Acute Contagious Diseases," by Drs. Welch and Schamburg.
Published by Lea Bros., Philadelphia.

**A WHOLE SCHOOL STRICKEN WITH SMALL-POX, EXCEPTING
THE VACCINATED**

The facts are briefly presented in order of their development.

Christmas holiday week. Miss Opel Helm, school teacher at country school on the Penny road, near Dundee, Illinois, visits friends in Minnesota.

January 6, 1913. Miss Helm returns from Minnesota and resumes teaching. Children from seven families attend the school.

January 13, 1913. Miss Helm taken sick, a diagnosis of small-pox being made two days later. *Miss Helm never was vaccinated.*

February 1. Mother of Miss Helm comes down with small-pox. *Mother never vaccinated.*

Father, vaccinated some time previously, remains well.

February 5. Two children of Charles Fritz, pupils at Miss Helm's school, come down with small-pox. *Never vaccinated.*

All other members of Fritz family had been previously vaccinated. All remain well.

February 5. Two children of Theo. Frink, pupils at Miss Helm's school, come down with small-pox. *Never vaccinated.*

Other members of Mr. Fritz's family, all previously vaccinated, remain well.

February 5. Two children of Mr. Coats, pupils at Miss Helm's school, come down with small-pox. *Never vaccinated.*

Other members of Coats family, all vaccinated, remain well.

February 12. One child of August Price, pupil at Miss Helm's school, comes down with small-pox. *Never vaccinated.*

Other members of Price family, all vaccinated, remain well.

All six children of the other three families, who attended Miss Helm's school had been previously vaccinated. None contracted the disease.

—*From Bulletin Chicago Department of Health.*

MARRIAGES

J. F. BONE, M.D., to Miss Grace Scatterday, both of Pontiac, February 6.

AUGUST STRAUCH, M.D., to Miss Clara Loos-Tooker, both of Chicago, February 1.

FREDERICK A. KOHN, M.D., to Miss Tilda Ehrman, both of Chicago, January 27.

PETER SAUL WINNER, M.D., to, Miss Minnie Weisbrod, both of Chicago, January 7.

HERBERT ANTHONY POTTS, M.D., to Miss Anna Schreit, both of Chicago, January 25.

FRANK LOUIS BROWN, M.D., to Miss Bernice Elizabeth Oswald, both of Chicago, January 29.

DEATHS

A. L. COLLINS, M.D., died at his home in Long Creek, Feb. 4, 1913. The body was taken to Decatur for interment.

JAMES P. GARM, M.D., of LaHarpe, died at the St. Joseph's Hospital at Keokuk, Ia., Jan. 24, 1913, of appendicitis; aged 42.

LOUIS T. BEEMER (license years of practice, Illinois, 1889), of Effingham; died at St. Anthony's Hospital, in that city, January 2.

PETER EPPLER, M.D., Northwestern University Medical School, Chicago, 1867; died at his home in Pontiac, Ill., November 3; aged 72.

ROBERT DEMPSEY BOYD, M.D., Rush Medical College, 1878; died at his home in Chicago, January 9, from valvular heart disease; aged 67.

EDWARD MAURICE MAY, M.D., College of Physicians and Surgeons, Keokuk, Ia., 1893; died at his home in Mt. Zion, Ill., November 2, from uremia; aged 44.

FRANCIS G. ARTER, M.D., Rush Medical College, 1868; for twenty-four years a practitioner of Chicago; died at his home in that city, January 22; aged 74.

JOHN CALVIN YOUNG, M.D., Beaumont Hospital Medical College, St. Louis, 1899; formerly of Roanoke, Ill., died in Phoenix, Ariz., Nov. 10, 1912, from tuberculosis; aged 42.

E. A. ROBINSON, M.D., for twenty-five years a practicing physician at Genoa, was found dead in bed on the morning of February 15. Death was supposedly the result of heart trouble. Aged 55 years.

RICHARD SIGMONDE HAC SALOMAN, M.D., College of physicians and Surgeons, Chicago, 1906; a member of the Illinois State Medical Society; died at his home January 6, from myelitis; aged 28.

VIRGIL CORYDON TAYLOR KINGSLEY, M.D., University of Michigan, Ann Arbor, 1883; a member of the American Medical Association; died at his home in Danville, Ill., January 10, from meningitis; aged 53.

JOHN C. CONNER, M.D., of Creseent City, on January 12, committed suicide by shooting himself through the head with a gun. The act was the result of despondency over ill health. He was past 70 years old.

WILLIAM PATCH, M.D., Western Reserve University, Cleveland, 1885; formerly a member of the American Medical Association; for many years a practitioner of Coleta, Ill.; died in the Watertown Hospital January 2.

W. A. GABBERT, M.D., of Mattoon, died at the residence of his brother at Bloomington, Ill., Feb. 13, 1913; aged 65 years. Dr. Gabbert died of arterial trouble, which he suffered for a year and a half prior to his death.

J. PARK MCGEE, M.D., of Tuscola, Ill., died in a hospital at Sherman, Texas, following an operation. Dr. McGee was born in Kentucky, Jan. 5, 1848; he served two terms in the state legislature in the latter part of the 80's.

ADAM LACKEY, M.D., of Chicago, died February 13 at Wesley Hospital; aged 83 years. He was found wandering about the streets in the cold with frozen feet and toes, and was removed to Wesley Hospital, where portions of the toes had to be amputated.

WILLIAM LOUIS RABE, M.D., Rush Medical College, 1866; a member of the American Medical Association, Illinois State Medical Society; also a graduate of McCormick Theological Seminary, Chicago; died at his home in Dwight, Ill., January 13, from pneumonia; aged 73.

EPIHRAIM M. EPSTEIN, M.D., College of Physicians and Surgeons, New York City, 1859; first president of the University of South Dakota, Vermilion; formerly a practitioner of West Liberty, W. Va., and instructor in science in Bethany College; died at his home in Chicago, January 26, from senile debility.

JOHN OWEN HUGHES, M.D., Rush Medical College, 1867; one of the oldest practitioners of North Chicago and a resident of Norwood Park; a veteran of the Civil War and a member of the Illinois State Medical Society, died suddenly while making a professional call near his home, February 5, from heart disease; aged 75.

H. F. BALLARD, M.D., of Chenoa, Ill., died February 7 at St. Francis Hospital, Peoria, where he was taken two weeks ago and an operation performed for ulcer of the stomach. He was born in Kentucky, May 13, 1852, and graduated from Rush Medical College in 1882; he had been a practicing physician in Chenoa for thirty years.

MATTHEW MARVIN, a matriculate of Rush Medical College in 1847, and a practitioner of Warren and Galena, Ill., for ten years or more, thereafter an attorney, who had served as county judge in Jo Daviess and Stephenson counties, Ill., and as city attorney of Freeport for ten years; died at his home in that city, December 11, from senile debility; aged 91.

DAVID W. JUMP, M.D., the oldest practitioner in Plainfield, Ill., suffered a stroke of apoplexy while attending at the bedside of a patient near Wheatland, Ill., on the night of January 31, which resulted in his death a few hours later. Dr. Jump was born in Chicago, Ohio, Aug. 24, 1847; graduated from the Medical Department of the University of Michigan in 1871, and went at once to Plainfield, where he has practiced ever since. He is survived by his wife and two sons, Drs. Clyde and Floyd Jump of Boseman, Mont.

Book Notices

ANATOMY AND PHYSIOLOGY FOR NURSES. By LeRoy Lewis, M.D., Surgeon to and Lecturer on Anatomy and Physiology for Nurses at the Lewis Hospital, Bay City, Mich. Second Revised Edition. 12mo of 344 pages, with 161 illustrations. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$1.75 net.

The second edition, revised and enlarged, of this excellent text-book for nurses has just been issued. The volume covers some three hundred and fifty pages and is excellently composed for training schools for nurses. The book is fully illustrated with cuts and diagrams of the human body which assist the student nurse materially in comprehending the subject matter. The work is concise and practical. It is excellently written and well printed and we recommend it for the training schools for nurses in America.

THE ELEMENTS OF THE SCIENCE OF NUTRITION. By Graham Lusk, Ph.D., M.A., F.R.S. (Edin.), Professor of Physiology at Cornell Medical School, New York. Second edition, revised. Octavo of 402 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$3.00 net.

Not a mere text-book of food values and composition of foodstuffs, but rather a scientific study of the intimate relation of food to the physiologic maintenance of life and health, and the pathologic results of the lack of harmony between normal chemie and physiologic correlation. A clear conception of the relation of food to health is possible, only by a study of clean cut laboratory methods as is presented by the writer. The volume is one to be studied rather than read. The subject matter being so essentially up to date is necessarily an advance, of even recent teaching, and hence should be in the library of every physician who attempts to keep abreast of the rapid strides being made in internal medicine.

EXERCISES IN EDUCATION AND MEDICINE. By R. Tait McKenzie, A.B., M.D., Professor of Physical Education, and Director of the Department, University of Pennsylvania. Octavo of 406 pages, with 346 illustrations. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$3.50 net; Half Morocco, \$5.00 net.

This is a work that will be useful not only to teachers of gymnastics but physicians as well. The book is divided into two parts, the first dealing with Exercises in Education, the second with Exercises in Medicine. Chapters XIX and XX treat of Exercises and Athletics in the treatment of heart diseases. The Schott treatment is given in full and is easily worth the price of the book. The other chapters are just as interesting and the book is one that every physician should have. The illustrations are unusually fine and will assist greatly in studying the subject.

MODERN MATERIA MEDICA AND THERAPEUTICS.—By A. A. Stevens, A.M., M.D., fifth edition, thoroughly revised in conformity with the eighth revision (1905) of the United States Pharmacopeia. W. B. Saunders Company, Philadelphia and London.

This book has won for itself a permanent place among standard works on the various branches of medical science. Every agent recognized by the regular profession as capable of doing good to the sick is described in its pages, and its management and therapeutic properties are given in detail. Therapeutic agents are arranged, as far as possible, according to their effects upon the system. The alteratives, anesthetics, diuretics, antipyretics, etc., constitute separate classes in which are arranged the drugs whose chief actions are indicated by those headings. Though works devoted to this subject abound, no doctor who knows Stevens' book will be content until he has this latest edition.

CLINICAL EXAMINATION OF THE URINE AND URINARY DIAGNOSIS. By J. Bergen Ogden, M.D. Medical Chemist to the Metropolitan Life Insurance Company, New York. Third edition revised. Octavo of 427 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$3.00 net.

The making of urinary examinations is almost a daily duty with most practitioners. To have at one's command a work that is modern in every way, and not too bulky, is an acquisition that the busy doctor should prize. There is nothing omitted from this book that one could expect to find in such a volume. It is concise, and yet full and accurate. The methods given are the best known and made as simple as possible. We have examined the contents of this volume very carefully and feel very free to recommend it to all who require a work on urinalysis. The paper, press work and illustrations are excellent.

THE PRACTITIONER'S VISITING-LIST FOR 1913. An invaluable pocket-sized book containing memoranda and data important for every physician, and ruled blanks for recording every detail of practice. The Weekly, Monthly and 30-Patient Perpetual contain 32 pages of data and 160 pages of classified blanks. The 60-Patient Perpetual consists of 256 pages of blanks alone. Each in one wallet-shaped book, bound in flexible leather, with flap and pocket, pencil with rubber, and calendar for two years. Price by mail, postpaid, to any address, \$1.25. Thumb-letter index, 25 cents extra. Descriptive circular showing the several styles sent on request. Lea & Febiger, Publishers, Philadelphia and New York.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M.D., at Mercy Hospital, Chicago. Volume I, Number 6 (December). Octavo of 153 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Published Bi-Monthly. Price per year: Paper, \$8.00. Cloth, \$12.00.

The final number of Dr. Murphy's Clinics continues to reflect the remarkably rich clinical material which is found at the Mercy Hospital. Not the least valuable part of this number will be the remarks of Dr. Bastianelli of Rome, and Dr. Murphy's clinic of August 24, 1912, in which he details the work of Professor Fichera in the investigation of carcinoma. As usual a large part of the text is devoted to bone surgery, and much valuable information is contained therein.

PSYCHANALYSIS.—Its Theories and Practical Application. By A. A. Brill, Ph.B., M.D. Chief of the Neurological Department of the Bronx Hospital and Dispensary; Clinical Assistant in Psychiatry and Neurology at Columbia University Medical School. Octavo of 337 pages. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$3.00 net.

In this work Dr. Brill gives full expression on Professor Freud's work on Psychanalysis. It is a remarkable fact that for the first time Professor Freud makes a pathologic study of dreams. Psychanalysis is the only system of psychotherapy that deals with the neuroses as entities instead of treating symptoms as do hypnotism, suggestion, and persuasion. To hypnotise a patient because he suffers from obsessions or phobias is equivalent to treating the cough or fever regardless of the disease of which it is but one of the manifestations. Hypnotism takes no cognizance of personality, it simply imposes blind obedience which at best lasts until worn off. Psychanalysis always concerns itself with the individual as a personality and enters into the deepest recesses of the mind. It is for that reason that the results of psychanalysis are most effective; and it is only through psychanalysis that we can hope to gain real insight into the neuroses and psychoses, a thing of prime importance in the study of mental prophylaxis.

Every student of medicine will find matter of interest in this volume even though he may not be prepared to give out the numerous suggestions of the practical treatment advice.

PRINCIPLES AND PRACTICE OF OBSTETRICS. By Joseph B. De Lee, A.M., M.D. Professor of Obstetrics at the Northwestern University Medical School. Large Octavo of 1,060 pages, with 913 illustrations, 150 of them in colors. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$8.00 net; Half Morocco, \$9.50.

This magnificent work by the well known Chicago professor is probably the most complete treatise on this subject in any language before the medical profession at this time. It is well known by his friends that Professor De Lee has been engaged in preparing this work for many years, and as he states in his preface his long experience as a teacher of physicians, students, and nurses is reflected in these pages. There is a wealth of detail and illustrations as we believe is found in no other treatise. If this book were placed in the hands of every practitioner of obstetrics in America, there would be undoubtedly a remarkable conservation of infantile life in the country. Very few if any expressions of interest in connection with this important function have been omitted, and the chapter on Hygiene of Pregnancy will appeal to the general practitioner as giving many valuable hints.

Saunders and Company have done an excellent job of printing and we look for an unprecedented sale of the volume.

DISEASES OF CHILDREN. By Benjamin Knox Rachford, of the University of Cincinnati.

This is a well balanced, thoroughly practical treatise on diseases of infants and children, and can be highly recommended as an immensely practical and safe guide for the general practitioner. Dr. Rachford has secured the cooperation of a number of his Cincinnati colleagues, and the result is a volume which does great credit to the profession of the old "Queen City." The price of the volume is \$5.00.

BUILDING A PROFITABLE PRACTICE. By Dr. Thomas F. Reilly, of the University of New York.

If this work would be placed in the hands of every medical graduate when he received his diploma, and if the advice were followed by the young practitioner, correct habits of thinking would be developed and disastrous errors be avoided. The work can be profitably read by every physician both in city and country. Directions are given for post-graduate studies in all the foreign countries, and valuable hints on the physician's office and financial relations.

Price of this work is \$2.00.

MEDICAL MEN AND THE LAW. By Hugh Emmett Culbertson, Esq., Member of the Ohio and New York Bars. Lea & Febiger, Publishers, Philadelphia and New York. Cloth bound, \$3.00.

This unique work by a lawyer, son of a physician, touches the personal interests of every practitioner in any branch of the art of healing. It deals with the duties, rights and liabilities of the professional man toward the public as settled by law, and also the legal relations of the regular profession to practitioners of the many schools of healing now in vogue, as well as the status of such healers in the eye of the law. It behooves every medical man to know the multitude of points in which his relations to the public and his fellow practitioners are subject to a well settled body of law, to the end that he may avoid unexpected trouble on the one hand, and know his rights and power on the other. This new work is comprehensive and authoritative, and its possession and perusal will save many times its cost if only in the item of collecting bills, as well as many an anxious hour.

A copy should be in the possession of the legal committee of every county society. The well established physician who has bought this knowledge in the costly school of experience will appreciate the value of such work and will give it a place in his library within easy reach for frequent consultation. The young physician will be wise to profit by the knowledge so conveniently placed at hand, and will be glad to avoid the trials of his elders. Conversely it affords the lawyer a knowledge of the relations of his profession to that of medicine. It is an unusually serviceable book.

A NEW WORK ON THE HISTORY OF MEDICINE. W. B. Saunders Company, publishers, of Philadelphia and London, have in active preparation a work on the History of Medicine, by Dr. Fielding H. Garrison. Principal Assistant Librarian, Surgeon-General's Office, and Editor of the Index Medicus.

Dr. Garrison's twenty years' experience in medical bibliography, and the unusual advantages derived from his close touch with the rich stores of the Surgeon-General's Office, fit him most admirably for such a work as this.

His book will present the history of medicine from the earliest ancient and primitive times; on through Egyptian Medicine, Sumerian and Oriental Medicine, Greek Medicine, The Byzantine Period; the Mohammedan and Jewish Periods, the Medieval Period, the Period of the Renaissance, the Revival of Learning and the Reformation; the Seventeenth Century (The Age of Individual Scientific Endeavor). The Eighteenth Century (The Age of Theories and Systems). The Nineteenth Century (The Beginning of Organized Advancement of Science). The Twentieth Century (The Beginning of Organized Preventive Medicine). There will also be Appendices covering Medical Chronology, Histories of Important Diseases, Histories of Drugs and Therapeutic Procedures, Histories of Important Surgical Operations, and Bibliographic Notes for Collateral Reading.

Dr. Garrison's work will undoubtedly be a valuable book to every medical man. In this one volume he will get a complete history of medicine from its earliest times, presented in a concise form.

The illustrations are intended to stimulate the reader's interest in the picturesque aspects of medicine and in the personalities of its great leaders. The biographies will be confined to the most important facts and to interesting personal traits. The original bibliographic references to the important discoveries, operations and experiments will be given. Each period is to be followed by a brief survey of its social and cultural phases. Altogether it promises to be a most important addition to medical literature. We await its publication with much interest.

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No. 4

ORIGINAL ARTICLES

FULGURATION TREATMENT OF BLADDER TUMORS *

HERMAN L. KRETSCHMER, M.D.

Urologist to the Presbyterian Hospital; Junior Attending Genito-Urinary Surgeon to the
Alexian Brothers Hospital

CHICAGO

Tumors of the urinary bladder present a rather discouraging outlook as regards prognosis and treatment, when one has in mind a complete and permanent cure.

It is a well known fact that the tendency for papillomata is to recur after operation in a large number of cases operated on, this recurrence having been variously estimated up to 50 per cent. Not only do they recur at their former sites, but new tumors are often formed in parts of the bladder remote from the site of a former operation, and they have often been known to recur in the operation scar.

At the first German Urological Congress, Liechtenstern reported two cases in which the recurrences were found in the recti muscles, these recurrences being malignant in nature, after the original tumors had been diagnosed histologically as benign papillomata. In one of these nodules excised from the muscle he found alveolar carcinoma with bone formation.

On the other hand, patients may suffer for many years with papillomata of the bladder without any signs of malignant degeneration. For example, Casper records one case of benign papilloma of twenty-six years' duration, whereas Stein reported a patient who had had a benign papilloma for forty-two years.

If we add to the probabilities of recurrence, the possibilities of malignant degeneration of both the original tumor and its recurrences, the dangers of anesthesia and postoperative complications, and if we consider

* Read at the Sixty-Second Annual Meeting of the Illinois State Medical Society, at Springfield, May, 1912.

the poor surgical risks in those who have had profuse hemorrhages extending over a long time before being operated on, the outlook for the ultimate cure in papillomata of the bladder is indeed bad.

Any method of treatment, therefore, which is easy of application, which is sure in its results, and which can promise a smaller percentage of recurrences after operation and which, in addition, requires no anesthetic, is a mode of treatment which bids fair to displace the present ways of dealing with these tumors.

It is with this object in view that I wish to call your attention to a comparatively new method of treating papillomata of the urinary bladder. This method of treatment has been used for about two years, having been first reported by Beer, and closely followed by the preliminary report of Keyes, Jr. It has been called the fulguration treatment by various authors, although Beer objects to this term. Thomas, of Philadelphia, calls it a method of desiccation. It is my object to call your attention to this form of treatment and to outline briefly the technic of using it, and to report five cases treated in this way.

1. *Source of the Current.*—The high frequency current necessary for carrying out this method of treatment is obtained from the apparatus made by Wappler of New York. In the early work a smaller apparatus was used, but without success, and therefore, the cases treated by means of this inefficient apparatus will not be included in this series of cases.

2. *Type of High Frequency Current Used.*—At first the unipolar or Oudin current was utilized. This has rendered good service, but there were two cases in which it appeared that the current was not strong enough to effect a complete cure, i. e., to cause all of the tumor to disappear. It was then decided to use the bipolar or D'Arsonval current. This has given the best results and is now used as a matter of routine. One pole is placed in the bladder and will be described below. The other pole is placed in one of two places, depending on the location of the tumor. If the tumor is situated in the apex of the bladder a large flat metallic plate is placed on the abdomen in the region of the suprapubic area. In those cases where the tumor is found on the base of the bladder an electrode is placed in the rectum or vagina.

The electrode placed in the bladder consists of a steel wire well insulated. It is of a Number 6, French, so that it can be easily passed through the channel of an ordinary catheterizing cystoscope. Copper electrodes may be used with equal success, as has been done by Beer of New York.

We have at various times used the Nitze, Brenner, Brown-Buerger and the Wappler oblique vision cystoscopes, depending on the size and location of the tumors.

TECHNIC

The preliminary steps of the technic are those usually employed for cystoscopy and ureteral catheterization. The patients are prepared with green soap and water and bichlorid and the bladder distended with water. After having introduced the cystoscope the tumor is brought into view

and the fulguration wire is passed through the catheter channel of the cystoscope until the end of the wire is in view. The wire is then plunged into the tumor and the current turned on. The spark gap is about $1/6$ to $1/3$ of an inch wide. Just as soon as the high-frequency current is turned on, bubbles are seen emanating from the tumor. If the tumor is small, or the electrode has been placed near the top of the tumor an immediate blanching of the tumor is seen. This treatment can readily be carried out under the guidance of the eye, provided the insulation of the fulguration wire is intact; unless the insulation is intact a short circuit in the cystoscope and subsequent burning out of the cystoscopic lamp might result.

After having allowed the current to pass into the tumor for about twelve to fifteen seconds, the current is shut off, the fulguration wire withdrawn and reapplied to another part of the tumor. In large tumors this procedure can be repeated until many different areas of the tumor have been treated in one sitting. As long as five or six minutes may be consumed in one sitting. Naturally, the duration of each treatment will depend on the size of the tumor. For example, in one case, one sitting consisting of three 13-second applications was enough to completely destroy a small papilloma (Case 3).

The duration of the burnings or fulgurations depend on three factors:

1. The patient. 2. The operator. 3. The instruments.

I.—THE PATIENT

Under this heading we may take up the following:

- (a) Pain.
- (b) Hemorrhage.
- (c) Danger of burning bladder-wall.
- (d) Size of tumor.

(a) Pain.—As long as the intravesical electrode remains in contact with the tumor, no pain is experienced by the patient. When working near the base of the tumor, or if the electrode comes in contact with the bladder-wall, the patient frequently complains of pain. So that during the first fulgurations there is no pain, whereas toward the end of the treatment, while working near the bladder in treating the remaining tags, the patient at times complains of pain. It is also necessary to consider the pain incident to cystoscopy. This is variable in different persons, so that some of the patients cannot tolerate long sessions as well as others.

(b) Hemorrhage.—The rule in treating papillomata has been that the fulguration immediately stopped the hemorrhage. In treating an epithelioma a great deal of hemorrhage was produced, so that it became necessary to stop fulgurating in order to distend again with clear media. We have never had this experience in papilloma cases.

(c) Danger of burning bladder-wall.—This should always be borne in mind when treating small tumors or when treating the fragments remaining after fulgurating larger growths.

(d) Size of tumor.—As previously stated the size of tumor determines the number of treatments, one case requiring as many as six sittings. The tumor was of a rather large size and cystoscopy produced more or less irritation so that each treatment was limited to three or four areas.

II.—THE OPERATOR

From the operator's end the duration of the burns may be either long or short, depending entirely on personal perseverance and patience.

III.—THE INSTRUMENTS

(a) Short circuiting of cystoscope so that the light is extinguished. This can be avoided by careful attention to the rheostat, cords, etc., prior to beginning the fulguration, and by careful use of only such wire for fulguration as is well insulated. Some of the wire we have had has become brittle and cracked, thereby giving rise to short circuits.

(b) Burning off of end of fulguration wire. After the current has been turned on and the treatment been carried out for a little while, sometimes only ten seconds, the insulation becomes soft and falls off or burns off from the end of the wire, so that it becomes necessary to withdraw the wire and cut the end off squarely. Unless this is done there is danger of the bare wire causing a short circuit in the cystoscope.

LIMITATIONS

1. Very large papillomata. In order to carry out fulguration treatment successfully, the usual conditions necessary for cystoscopy must be fulfilled. It is therefore needless to say that if cystoscopy cannot be carried out that we cannot employ fulguration. This recently occurred in one case referred by Dr. Wilbur Post from Dr. Billings' service. The entire bladder was completely filled with four large papillomata so that cystoscopy was impossible.

EFFECTS

Usually when the high-frequency current is applied the tissues become white and shrivel up. Sometimes the tumor surface appears dark, as though it were baked. Not infrequently after an application a larger or smaller piece of the tumor adheres to the end of the fulguration wire. At other times these small pieces may be passed at the next urination, and often they are obtained from the wash-water. These are carefully saved and examined microscopically.

In regard to the results obtained in the treatment of carcinomata, my results correspond quite closely to those of other writers.

I wish to take this opportunity of reporting the following cases treated by this method.

CASE I.—Mr. C., aged 64 years. Up to the onset of his present trouble he had always been perfectly well. In October, 1911, he had his first attack of hematuria. This was without pain or any disturbance of micturition. He immediately went to bed for a few days and the hematuria ceased. Two weeks after this he had a second attack of hematuria which persisted for six weeks, so that the total period of hemorrhage from the bladder was eight weeks. Toward

the end of this period he passed large clots daily. The hematuria was variable; sometimes the first urine would be clear, then he would pass a clot and the remainder of the urine would be bloody. At other times the entire urine was well mixed with blood.

Two days ago there was a period of twenty hours during which he passed clear urine so he thought he was perfectly well.

For the past three or four years he has been obliged to get up once at night. During this time he has pain along the posterior aspect of the thighs. This was not very severe and he did not attach much significance to it. He has never had perineal pain or scrotal pain.

Physical examination negative with the exception of a slight edema around the malleoli. Rectal examination negative. Blood-examination: hemoglobin 60 per cent. Urinary examination negative except for the presence of large amounts of red blood-corpuscles; no casts found. Cystoscopically a small papilloma was found in the right side of the bladder. The surface of the tumor was ulcerated and bleeding profusely.

First fulguration treatment on Jan. 6, 1912. This was not accompanied by any pain and there was almost immediate cessation of the hemorrhage. A small piece of tumor tissue came away on the end of the fulguration wire. This was examined histologically and was diagnosed benign papilloma, no signs of malignancy being found. Second fulguration treatment on January 16. There had been no bleeding since the last treatment but a slight frequency of urination lasting about twenty-four hours had followed it. The top of the tumor shows an area which appears as if part of the tumor has sloughed away. Third fulguration treatment January 26. Fourth fulguration treatment February 12. Fifth fulguration treatment April 2. The last cystoscopic examination was made on May 11. All of the tumor has disappeared and as a result of the last fulguration ulceration of the bladder is present. For the last treatment the bipolar current was used, whereas the previous treatments were made with the unipolar current. The patient feels perfectly well. A subsequent cystoscopic made since this paper was read, showed a complete disappearance of the tumor and the scar completely healed.

CASE 2.—Dr. J., aged 36 years; patient of Dr. L. E. Schmidt. The patient first came under observation in 1907. He complained of terminal hematuria of three years' duration, which for three months had occurred daily. The urine was clear, but just at the end of urination a few drops (2 to 10) of bright red blood followed. Twice in the last six months the whole urine had been red for several days. No pain, except just at the end of urination when there was a stinging sensation back of the symphysis. There was no frequency at night, but during the day he urinated at least every two hours.

He was cystoscoped by Dr. L. E. Schmidt, who diagnosed papilloma. The tumor was situated just behind the left ureteral orifice. Dr. Schmidt did a suprapubic cystotomy and removed the tumor. Uneventful recovery.

After leaving the hospital the patient remained well for four years until Dec. 20, 1911. Following an unusually severe confinement case the doctor felt a "giving away" in his bladder. He immediately voided urine which was very bloody. He at once came to the Alexian Brothers Hospital and was examined cystoscopically with the following result: The bladder shows no stone, no cystitis. The site of the previous operation is perfectly normal and there is no sign of a recurrence of the previous tumor. In the apex of the bladder is a small papilloma about the size of the end of a finger which is bleeding profusely. The patient was fulgurated the first time for about thirty-six or forty seconds. The bleeding immediately stopped and on washing out his bladder at the end of the treatment a large piece of the tumor came away. This was sectioned and diagnosed benign papilloma. The patient had no disturbance following this treatment and came back in ten days for a second treatment. Three days after the second fulguration he had another severe hemorrhage. The third fulguration treatment was given and the patient appeared not to be making the usual progress which these cases

do. It was therefore decided that the treatment be changed from the unipolar to the bipolar current. The fourth treatment was given with the bipolar current and the tumor was fulgurated in four or five different areas for twelve seconds in each area. Since then there has been no more bleeding and a recent cystoscopy shows simply an ulcer at the site of the tumor. The ulcer is surrounded by considerable edema which might suggest malignancy but it is purely due to the reaction of the treatment. This has been described by Keys, Jr., and usually disappears in due course of time.

CASE 3.—Mr. G., aged 29 years. The first hematuria occurred in October, 1911. The hematuria appeared in one urination only, was free from pain and came on without apparent cause. The second hematuria occurred three months after the first, and was present in only one urination. The third hematuria was not so severe as the two previous attacks, occurring while the patient was in the bath and consisting principally of clots which were rather small.

The general physical examination was negative. Cystoscopically a slight edema of the internal urethral orifice was found, no cystitis and no stone. Both ureteral orifices were negative. In the region of the left ureteral orifice was seen a small papilloma, well pedunculated, about the size of a lead pencil and about an inch long. A high-frequency treatment, twenty-five seconds in duration, was given. This was the only treatment the patient received. Cystoscopic examination on May 2 shows that the tumor has completely disappeared. The site of the tumor is surrounded by an area of hyperemia.

CASE 4.—Mrs. S., aged 79 years, referred by Dr. Ware. For the past seven or eight weeks the patient has been suffering with painless hematuria. There have been no symptoms, no frequency of urination, no pain on urination and no calculi have been passed. Seven years ago the patient had a similar attack of painless hematuria which was of shorter duration. She was treated with bladder irrigations of weak adrenalin solution. She had been free from hemorrhage during the past seven years.

The patient's general condition is bad. She has lost some weight. The mucous membranes are all very pale, due to the loss of blood. Urinary examination shows many red blood-corpuscles. No casts were found. Cystoscopically the bladder mucous membrane is very anemic. In the region of the left ureteral orifice a papilloma the size of a small walnut is seen and in the bas-fond a small blood-clot was found. The first fulguration treatment was made in three different parts of the tumor for twelve seconds in each place. There was an immediate cessation of the bleeding and it has not recurred since. The patient says she is perfectly well now, that there is nothing wrong with her and it has been impossible for Dr. Ware to convince her of the importance of coming back for cystoscopic examination and further fulguration treatment. This case of course cannot be put down as a cure but the best we can say is that the procedure was efficient in stopping her hemorrhage immediately. This was the only line of treatment which could be carried out in her case on account of her age and the exceedingly bad physical condition due to the persistent hemorrhage.

CASE 5.—(As previously stated in an earlier part of this paper, it was impossible to fulgurate this patient successfully on account of the enormous size of the papillary tumors which completely filled his bladder.)

RESULTS

The value of any new therapeutic measure is based on the results. These can best be considered under two heads:

1. Immediate.
2. Remote.

The immediate results were absolutely satisfactory in treating the cases of papilloma. That is, the fulguration caused a cessation of the hemorrhages and after a variable number of treatments the tumors

completely disappeared. These results correspond with the results of others who have used this form of treatment.

The remote results can best be determined only as time goes on. The longest published case that I have been able to find is one reported well nineteen months after cessation of the treatment. This case is reported by Keyes, Jr., who also reports two cases well one year after operation.

If we bear in mind the simplicity of the treatment which can be carried out in an ambulatory way and the ease of treating small recurrences should they arise, this mode of treatment at least deserves consideration in the treatment of benign papillomata of the bladder.

29 East Madison Street.

DISCUSSION

Dr. L. W. Bremerman, Chicago: It gives me great pleasure to be called upon to discuss this exceedingly important paper of Dr. Kretschmer and to add my experience as an evidence in the successful treatment of this condition of papilloma of the bladder by the use of the high frequency spark or current. I have had under my observation during a period of 19 months 13 cases of papilloma of the bladder. The first case, which I reported in a paper read before the Urological Society in September, 1911, was one following the reading of a paper by Dr. Keyes, in which my attention was called to this form of treatment. Four or five seances were given in the destruction of these small papillomatous growths. I have had this patient under observation ever since, at frequent intervals, and have made cystoscopic examinations of the bladder and there has been no recurrence in this case treated for the longest period of time, 19 months. Others have varied from 19 months to a few weeks. There have been no recurrences in any of the cases whatever, with the exception of one, a report of which I will read to you in a moment.

The paper gave the idea that this form of treatment required dexterity and a great deal of preparation as to technic. I do not think the author meant to convey that impression. Any one who is capable of making a cystoscopic examination is capable of treating a papillomatous growth in the bladder by the use of the high frequency spark. We see how frequent recurrences have been from the open operation by the suprapubic route for tumors of the bladder, the great mortality percentage occurring from recurrent conditions usually developing into the malignant type.

In my article which I read before the American Urological Society in September, I reported seven cases in which I performed the open operation, and five of the patients died within a period of fourteen months from recurrent carcinomatous degeneration. Whether or not the trauma produced by the open operation was the cause of the condition recurring as a malignant growth, I cannot tell. But now we have a method by the use of the high frequency spark which allows the patient to continue to attend to his daily duties, going to the office or the hospital for a few minutes sitting, where the treatment is given painlessly, and after a few seances or sittings the bladder is cleared of the papillomatous growth.

There is one case which I wish to report as a recurrence of the condition from the use of the high frequency treatment, and I report it to prove that there is such a thing as recurrence following this form of treatment.

Male, aged 34 years; single. Referred to me by Dr. Harsha. This is an exceedingly interesting case. Family history negative. Previous history: had gonorrhea once or twice fourteen years ago, nothing else. For about four months prior to two years ago the patient began to have urinary disturbances, frequency of urination with pain. He consulted a physician, who treated him by lavage and internal medication, with no improvement. In fact, blood was soon noticed in his urine. Dr. Harsha was consulted, and two years ago, in October, the patient was operated upon. The growth was removed through a suprapubic cys-

totomy. Patient left the hospital in a few weeks. He was apparently well for several months. One year ago I saw the patient with Dr. Harsha. Cystoscopy showed the largest growth I have ever seen in the bladder. Dr. Harsha performed another suprapubic operation and scraped out a handful of soft material.

I might say that the laboratory report in both instances showed papilloma. The patient left the hospital apparently cured. Five months ago he consulted me. Cystoscopy showed an extensive recurrence covering a large area of the bladder, and looked typically papillomatous. Fulguration was instituted. He has been given a treatment every five days since, with a marked disappearance of the growth, although he still has a fair supply as some of the gentlemen here present can vouch for, as I showed this case at my clinic on Monday evening. I feel that I will clear up the condition with this line of treatment.

My conclusion, based upon these cases, is as follows: That papillomata should be considered malignant in all cases; that in all cases of long standing cystitis, which has persisted even in the presence of careful treatment, or with the history of frequent relapses, papilloma should be suspected, and the diagnosis confirmed or contradicted by cystoscopy; that the open operation is followed rapidly in the majority of cases by an early recurrence; that the fulguration method is followed by remarkable results, but as yet sufficient time has not elapsed for us to make a definite statement as to an absolute guarantee that this treatment will prevent recurrences.

THE NEEDS OF THE EYE, EAR, NOSE AND THROAT SURGEON IN GENERAL HOSPITALS *

FRANK ALLPORT, M.D.
CHICAGO

All eye, ear, nose and throat specialists are well aware of the difficulties to be encountered in endeavoring to do their work in general hospitals.¹

We visit such institutions as the New York Eye and Ear Infirmary, the Massachusetts Eye and Ear Infirmary, etc., and we envy those surgeons who seem so easily to dispose of their work. In these institutions we find permanent operating-room nurses and interns, who serve long terms and who become familiar with their duties. We find good instruments, solutions, lights, wards, etc., all arranged for the convenience of the surgeons and for the benefit of the patients. The surgeon is thus enabled to give his entire time and attention to his work, his operations and service, which, of course, results in a quiet, undistracted mind, better scientific thought and a higher percentage of good results. The work proceeds easily and comfortably, accompanied with only a minimum amount of confusion and irritation, and with all equipments and apparatus for ordinary and extraordinary occasions. To work in such institutions is a privilege and a pleasure, and it is an incontestable fact that, whatever may be the cause, whether it resides in the men themselves or in their atmosphere and surroundings, or whether it is the combined influence of both, men who work in such institutions, as a rule, stand

* Read before the Chicago Laryngological and Otological Society, Jan. 21, 1913.

1. For purposes of convenience in writing, such specialists will, hereafter in this article, be usually designated as "oculists and aurists" or "surgeons," although I include under this one title men who do all kinds of eye, ear, nose and throat work.

at the head of their profession and become recognized leaders and teachers.

In sharp contrast with these almost ideal working conditions, let us picture the difficulties encountered by the eye and ear surgeon in endeavoring to perform his duties amid the bewildering surroundings of a general hospital. It is not too much to say that he works in an alien atmosphere from beginning to end—in which he is constantly compelled to fight for his own rights and for the rights of his patients. Everybody is interested in surgery, in general medicine, in obstetrics, etc., but hardly anybody is interested in ophthalmology and otology. This is true of the superintendent, of the head nurse, of the interns and of the operating-room nurses and other nurses. A general hospital intern, who takes any particular interest in ophthalmology and otology, and who intends to make this his life work, is a species of intern that I seldom see. The consequence is that this service is an undesired one and barren of interest to the intern, who therefore gets through with it as quickly and as easily as possible. Such unwilling and perfunctory assistance is entirely unsatisfactory to the oculist, who learns to depend less and less on it, until, through force of circumstances, he pays but little attention to the intern, and learns to do practically all his important work himself; or, if he has an assistant in his office, he avails himself of this assistance, not only in his office work, but in his hospital work as well. The assistant accompanies him in his hospital rounds, makes independent calls, dresses patients, assists at operations, etc., and in fact almost usurps the function of the intern, an improper situation, which has been largely and gradually evolved by the conduct of the average hospital intern himself. Such conditions occasionally precipitate unfavorable criticism from the medical staff and from the interns themselves, the former feeling that proper discipline is not being maintained, and the latter feeling that they are being ignored and their places supplanted by interfering usurpers. The surgeon is sometimes called on to defend himself under such conditions, and he is reminded that hospitals are training schools for doctors, and that the interns are giving their services to the hospital in exchange for experience, and that therefore it is their right to receive from each attending medical man all the instruction that the material affords. Such protests are not frequent, however, for, as a rule, the average intern is only too glad to shirk the eye and ear service; still such protests do occasionally occur, and when they occur a defense is necessary.

I have already given some reasons why the services of the average hospital intern is unsatisfactory to the eye and ear surgeon: but in addition I desire to say that our specialty is quite unlike any other specialty, and requires special training, experience, adaptability and delicacy of touch and manipulation.

I have seen eyes ruined after operation by willing but untrained and clumsy interns, and a few experiences of this kind do not advocate the desirability of training green and transient interns at the expense of human eyes. An intern may be quite capable of dressing ordinary

wounds and of doing ordinary hospital, surgical and medical service, and yet be quite incapable of dressing eyes after cataract or other operations, or of dropping medicine into the eye without inflicting pain and injury, or of dressing a head after a radical mastoid operation without defeating the purpose of the operation. Oculists and aurists, therefore, frequently form the habit of devising methods by which they can at least measurably dispense with the services of the intern, either by doing the work themselves or by deputizing it to their office assistants. Even when (as occasionally happens) an intern appears who seems to take a real interest in this department, the surgeon's general line of conduct has become so well defined that it hardly seems worth while to change it for the brief space of one intern's service in this particular department.

And this brings us to a consideration of the great undesirability of short intern services in general hospitals. It is a fact that no intelligent surgeon will dispute that the usual short term of intern service in a given department is not conducive to good work, and is irritating and unsatisfactory to all concerned, for no sooner does an intern begin to wear off the newness and become really useful than he is transferred to another department, and a new man presents himself to be initiated into the mysteries of the department. This difficulty is overcome in some hospitals by allowing interns to serve only in a limited number of departments during their months of duty. This plan seems to be quite satisfactory where it has been tried, but I believe that some better method will be devised by those who are giving special thought to the subject. Certain it is, that until eye and ear surgeons can command the services of interns for many months of continuous service, these young doctors, however willing and earnest they may be, cannot be of any great utility to this department. At the present time, and under existing conditions, hospital superintendents and interns, superintendents of nurses and nurses seem to think that the main object of hospital work is to educate interns and nurses. My own opinion as to the use of hospitals is that they exist for the purpose of benefiting the sick and for the convenience of physicians, and incidentally for the education of interns and nurses.

And this leads naturally to the subject as to how the eye and ear department in a general hospital can best utilize the services of the general hospital nurse. When it comes to being of any real assistance to the surgeon in his hospital work, the general hospital nurse is nearly a hopeless proposition. This is not an ill-natured criticism, it is simply a statement of an unfortunate fact; neither is it a reflection on the nurse or her intelligence or willingness, as this statement is only possible because of circumstances and conditions over which the nurse has no control, namely, the constant changing of her location and occupation from ward to ward and from service to service. Between educating new nurses and new interns and patiently enduring their mistakes and shortcomings, the path of the attending oculist and aurist in a general hospital is certainly not strewn with roses. I wish to again emphasize the fact that I am not blaming these young people; indeed, I am not blaming

anybody. I am simply endeavoring to present my subject truthfully, for the purpose of ultimately producing better conditions.

The oculist and aurist in a general hospital has his patients scattered from ward to ward and from room to room. As he progresses from place to place he is constantly confronted with a new nurse and with new conditions. If an intern goes with him, he may carry a tray of drugs, instruments, appliances, etc., for whose reliability as to cleanliness, aseptic qualities, etc., no one can vouch, as it is no one's duty in particular to guard the dependability of these articles. He is, therefore, constantly in fear of using impure solutions, dirty droppers, infected ointments, etc. Sometimes each ward or room contains the particular articles he intends using on the patients in that particular locality; but here, again, he is confronted with the same fear of contamination that is in evidence when he is using solutions, etc., from a migrating tray whose reliability is more than doubtful, and he is almost certain to want something, such as a solution, a light, a probe, an ophthalmoscope, etc., that is not at hand and that takes much time and confusion to secure. And so he proceeds from one portion of the hospital to the other, changing nurses from place to place, encountering fresh obstacles and annoyances as he continues in his calls, dressings, etc., until he emerges from the hospital tired and dissatisfied with his work and the conditions under which he is obliged to prosecute his labors. Besides this, the proper fulfillment of the surgeon's orders in the interim between his visits, in a general hospital, is a practicable impossibility. The ever-changing ward nurse is quite incompetent to instill drops into the eye or to irrigate an eye, or to put ointment into the eye, or to change bandages, or to irrigate or dress an ear, etc. And as these things cannot be done properly during the surgeon's absence, he either dispenses with such necessary attentions altogether, or has them performed as infrequently as possible, in order to guard against the occurrence of damage occasioned by an inexperienced and therefore incompetent, not to say dangerous, nurse.

The operating-room conditions for the oculist and aurist in the general hospital are thoroughly unsatisfactory. The head operating-room nurse is by no means a fixture in most hospitals, and her time is usually absorbed in laparotomies, amputations, etc., so that when the eye and ear surgeon desires to operate he is usually assigned to one of the assistant nurses. There are several of these endeavoring to obtain operating-room experience, so that it may easily happen that the surgeon may be assisted by an ever-changing new nurse in his operations from day to day. He is thus irritated and annoyed, and therefore more or less incapacitated from doing the best work, by being constantly obliged to coach the nurse in her duties, and by using poor knives, scissors, sutures, etc., that are out of order, owing to the lack of proper inspection. In fact, the general hospital operating-room nurse has no conception of the instrumental necessities of instruments for the proper performance of ophthalmic surgery. Her ideas of surgical instruments are based on those required to do large surgical work, and the necessities of a cataract or iridectomy knife, or a pair of de Wecker scissors, or a proper needle,

are apparently beyond her conception. She drops cataract knives into a tray, with perfect unconcern, and allows them to collide with the sides of the tray, without any conception of the delicacy of the knife, or with the fact that it should not be used at all if its point is not perfectly true. Nor does it do any good to instruct her, for she may be gone from her operative experiences to-morrow, and a new face, with all of its discouraging possibilities, may confront the surgeon. These are some of the difficulties that constantly confront the oculist and aurist who endeavors to do his work in a general hospital. I have not completely covered the ground by any means, but I have perhaps said enough to afford an insight into the subject. Again I wish to disclaim any intention of critical indulgence on hospitals, interns or nurses, they are merely the natural products of misconceptions.

Eye and ear work was the first to become isolated, and it still is the most clearly defined of all the specialties. Almost all general physicians and surgeons refuse to do any appreciable amount of eye and ear work. They frankly admit their ignorance, and do not care to overcome it. This idea prevails amongst interns and nurses, who consequently take but little interest in this clearly defined and isolated specialty, which is therefore neglected as much as possible during their hospital service.

Having thus, at least to a degree, called attention to certain unfortunate conditions interfering with desirable eye, ear, nose and throat work in general hospitals, let us endeavor to see if something cannot be done to remedy such conditions.

Concerning the intern situation, I have the following plan to suggest: What is needed is a long service of perhaps one year. Of course, it would not be possible to dictatorially appoint staff men to a year's service of this nature, without first gaining their consent; but if it was known that a certain hospital had a large eye, ear, nose and throat service, to which men desiring such work could be assigned for a year or more, I am inclined to believe that the position would be kept constantly filled. It should probably best be understood that while such interns would consider their eye, ear, nose and throat service to be of primary importance, yet they would be expected to work in other departments if their time was not fully occupied. This would probably be an additional incentive to secure the position, for most young doctors are anxious to round out their education, and to secure as much general knowledge and experience as possible. Eye, ear, nose and throat hospitals are comparatively few in number, and there are many young men desirous of special hospital training, who are unable to secure an internship in such special hospitals who would eagerly grasp at a prolonged special service in a high-grade general hospital. Such hospitals could, if thought desirable, issue a special certificate, to those men who have served a year or longer in this department. I believe this plan is feasible and practicable, and could be successfully carried out in hospitals having a sufficiently large service to be a temptation to the embryo specialist.

This plan as just depicted, is now being carried out in St. Luke's Hospital in this city. Some time ago Mr. Curtis, the superintendent, told

us that if we desired it and he could find a suitable man, we could have our own exclusive and continuous intern. Some pessimists believed a man could not be found who would be willing to give up a year's time to what eye, ear, nose and throat experience he could secure in a general hospital, but with remarkable promptness Mr. Curtis had about fifty applications for the position, from which he selected a man who is now the special eye, ear, nose and throat intern of St. Luke's Hospital. He will always have one or two junior interns working under him, who will change their service once in two months. The chief intern will have complete charge of the indoor and outdoor eye, ear, nose and throat service of the hospital, and at the end of his year's service he will be given a proper certificate. He will be present at all operations, and will himself do all the operating it is possible to entrust in his hands. It should be clearly understood that this intern is the eye, ear, nose and throat intern for the entire service, and that his services are just as much at the disposal of specialists that are not on the staff, as they are for staff members. There is no salary connected with the position, but the intern is supplied with his living expenses. He is at liberty to do all the pathologic work in the laboratory he desires, and we hope soon to have a special paid eye, ear, nose and throat pathologist at St. Luke's as we all recognize that the average general pathologist is not qualified to perform satisfactory pathologic work in our department.

Concerning the nurse situation, I believe we have at St. Luke's Hospital gone a long distance in solving this vexed problem. Some years ago, recognizing the necessity for better service, we secured through the cordial cooperation of the superintendent, Mr. Curtis, and the head of the training school, Miss Johnston, a nurse who was assigned especially to our department. She was an undergraduate and her term of service was for three months. Her first duty was to us and to our patients, but if her time was not fully occupied she could be assigned to other work. She kept the eye and ear trays stocked with fresh dependable solutions, ointments, droppers, instruments, pads, bandages, cotton, etc., etc., and always made the round of calls with the surgeons. She dressed and treated the patients between visits, kept the operating-room instruments in order, and was always present at operations to be of all possible assistance, although she did not supplant the function of the operating-room nurse. Just before her term of service expired another nurse was appointed to take her place, and for several days she instructed the new nurse in her duties, so that the break in service would be as little apparent to the surgeon and patient as possible. In this way, it will be observed, four special nurses were educated in a year, and these nurses have been most valuable to the staff, who always request the employment of these nurses, in case private nurses are desired in eye, ear, nose and throat cases. This plan worked very well for some years, but the need of continued service was constantly apparent to all concerned. Just as the nurse became of real service and dependability she would be exchanged for a new one, and then the educational process would begin all over again. The superintendent then still further improved our department

and enhanced the possibility of superior work by giving us an experienced graduate nurse to stay permanently in our service. She receives a regular salary, lives at the hospital, is an officer of the institution and has immeasurably lightened our burden and relieved our responsibilities. She has four assistant undergraduate nurses a year, who are assigned to her service, and who are instructed by her. This is done for the purpose of relieving the special nurse of certain routine work, and also for the purpose of continuing the process of educating nurses concerning the duties of eye, ear, nose and throat nursing.

The possession of our special intern and special nurse, has led us to hope for still better things in the future. We hope and believe that if our present conditions work harmoniously and successfully, and if our earnestness and usefulness to the hospital are further demonstrated, that within a short time a floor of the hospital will be devoted to our service, where we will have a superintendent, with nurses, sufficient interns, with a chief intern in charge, wards, rooms, operating-rooms, dressing-rooms, etc.—in short, a hospital within a hospital, where the cares of management will be lifted from our shoulders, and where the advantages of a special hospital will be at our disposal.

One of the most useful steps for the upbuilding of a successful eye, ear, nose and throat service, in a general hospital, is the establishment of a regular day and hour for an operating clinic, where operations shall be performed, and where doctors and medical students shall be welcomed. If there is sufficient material, two or more operating days should be established, and these days should be filled with unfailing regularity and should be made as interesting as possible. At St. Luke's we now have two such days. On Thursday afternoon for many years all kinds of eye, ear, nose and throat operations have been performed, and recently Tuesday afternoon has been set aside for all kinds of nose and throat work. Before long it is believed that more days will have to be added, and we hope that soon continuous operative work in our department will be performed every day in the week. The necessity for filling up these operative days is a great inspiration in the search for proper operative material. Besides this, it magnifies the importance of the department, keeps the beds filled, keeps the special intern and nurse busy and undeniably maintains and improves the technique and experience of the operator.

Every hospital, supporting a live eye, ear, nose and throat department, should possess an active dispensary for the treatment of these diseases, which should be under the charge of the eye, ear, nose and throat surgeons of the staff, aided by the chief eye, ear, nose and throat intern and his intern assistants. Such a dispensary is desirable, not only because it affords experience in refraction and other general work in these specialties, but because it must surely become a most important source of operative supply to the regular operative clinic. Outside of special hospitals or infirmaries, where the daily attendance of patients is abundant, it is not an easy matter to keep one, two or three operative clinics a week well supplied with material. Every effort should be made

to bring this about, and of the several available methods, a good live dispensary is one of the best.

This paper has been written with the purpose of suggesting how the eye, ear, nose and throat work in general hospitals can be improved and made better and more convenient and useful for all parties concerned.

I have explained to you what we have done and are trying to do at St. Luke's Hospital in this city, but I do not wish to be understood as claiming a perfect service at this institution, as much remains to be done. But of one thing I am sure, viz., that the service in our department, under the present conditions, is infinitely superior to what it once was, and that the ideas carried out in this hospital might with great benefit be put in force in all general hospitals.

7 West Madison Street.

DISEASES OF THE UVEAL TRACT DUE TO AUTOINTOXICATION *

CLARK W. HAWLEY, M.D.

Professor of Ophthalmology, Post-Graduate Medical School.

AND

MILTON H. MACK, M.D.

Professor of Gastrointestinal Disease, Chicago College of Medicine and Surgery

CHICAGO

The aim of this paper will be to report the number of cases of affections of the uveal tract, due to autointoxication, coming under my care within the past year and a half. The report will be almost entirely clinical, not going into the scientific detail of the diseases at all, giving only the outline of the conditions found, somewhat of the treatment, and the results obtained.

Dr. Mack has kindly consented to discuss the paper from the side of the autointoxication, so that it will relieve me from a rather embarrassing position, as the ophthalmologist at the present time knows very little of that subject, the internist not much more. It is only lately that we have begun to appreciate that autointoxication may be, and often is, the cause of many of the diseases of the uveal tract, the etiology of which has been a mystery to us.

We have suspected for a long time that the cause of many of the diseases of the uveal tract have been due to some poison from somewhere, but excepting in a very few cases, we had never thought to go so far as the intestinal tract as the cause of many of them. I am surprised that we, as ophthalmologists, had not looked to this source for the cause of many before, as our experience with uveal tract disease through diseases of the kidney should have been a pointer to us of the way to find the cause of very similar diseases of the uveal tract.

Many of the cases of chorioiditis that have passed through our hands, with a very indefinite origin, have undoubtedly been due to autointoxica-

*Read before the Chicago Ophthalmological Society, Dec. 16, 1912.

tion. I can think back now over a number of cases of inflammatory trouble of the chorioid and the posterior portion of the eye, the cause of which I could not determine, which I now believe were due primarily to infection from the intestinal tract. That will appear later from a case that I will report.

I remember very distinctly a number of years ago of a case of chronic uveitis in which it was impossible to elicit any history of specific origin, and at the time the patient inquired of me if it could be possible that his trouble came from some disturbance of the stomach or intestines. At that time I told him that I could not say, that it was possible it might have come from that source. As I look back at this case, I am now sure that the chronic uveitis was due to intestinal trouble, as I know the patient did suffer from some intestinal disturbance. He has removed so far from the city that it is impossible now for me to investigate the case, but I believe that a change of living, a change of climate and a change of work has probably cured his intestinal trouble, as he has written me that the disease is not now progressive. I am very sorry that this patient is not within reach so that I could make a more extended research of his case.

I hope, by the history of these cases and the discussion, which surely must follow the same, to bring out before the society some valuable information.

My first experience with a disease of the uveal tract, due to auto-intoxication, occurred about ten years ago, when two cases came under my care.

Mrs. C. consulted me in regard to the loss of vision of her left eye only. Vision had been reduced to about 3/10. Upon an examination of the fundus, I found a condition surrounding the macula very much like that which we find in albuminuric retinitis. The form of the white deposits was much more regular, also lacking in the peculiar tendency of the exudate in the albuminuric retinitis to follow along the arteries. It was confined to the macular region and was a trifle more than a disc in size. At that time, knowing very little and much less expecting that the condition found was due to infection from the intestinal tract, upon general principles I proceeded to attempt to cure a very obstinate constipation in my patient, as well as treatment of the local condition. I put the patient upon a course of calomel and sent her to an osteopath, as well. Some time later the patient reported to me an absolute return of vision to normal, and upon examination of the fundus I found that the exudate had entirely disappeared.

My second case was very similar to the first, and occurred in close proximity to it. The fundus was much less involved, and the vision also. This patient was not suffering from obstinate constipation, but from the experience that I had had with the former case, I put her upon a course of calomel, with a result that within a very short time the eye symptoms disappeared.

I now believe that had these two patients been examined with the same care that we now devote to similar conditions, we would have found the evidences of intestinal diseases.

These two cases should have set me to thinking seriously of the possibility of many of our diseases of the uveal tract being due to auto-intoxication, but at that time very little was known or thought about the subject, and as I had no more similar cases, they passed from my mind.

The next case that came under my observation was that of a physician, who had recurring attacks of iritis, which were readily controlled by atropin, hot applications, etc. The various tests by Wassermann and tuberculin resulted in negative findings. At that time the subject of autointoxication in connection with diseases of the eye was just beginning to be developed. A thorough investigation of this patient's acidemia and indicanuria developed that he was suffering from a severe case of autointoxication. He was put upon a non-protein diet, with the usual treatment of bowel flushings. The result has been that he has had no return of the iritis since that time, about two years. He tells me that after a very few meals of a protein character he will begin to feel the symptoms of a returning iritis.

Another case, in another physician, very similar in character, with recurring iritis, in which an examination was made, showing that he was suffering from an acidemia and indicanuria of a milder degree, and was put upon the same treatment as the former case, but the result was not encouraging at all. Polypi were removed from the superior portion of the nasal cavity, with an entire relief from the recurring iritis.

I speak of this case to show that a patient may be suffering from recurring iritis, may have acidemia and indicanuria, and yet that be not the cause of his recurring iritis.

The next case that I wish to report is one in which I shall give more minute details.

Miss C., of Cleveland, O., was referred to me with the following history: For three years she had been suffering from recurring attacks of irido-cyclitis, having been treated each time in Cleveland with the ordinary local remedies, combined with the general remedies in such cases, the results after each attack leaving her with poorer vision than before. Upon examination I found the vision right eye nothing, counting fingers at two feet, left eye vision 6/24. Upon inspection of the pupillary area I found considerable exudate filling the same, a very small opening in the left allowing the vision equalling 6/24. Upon the instillation of atropin in both eyes, no dilatation was possible, of any consequence, the pupil becoming slightly irregular at various points. The eyes were sensitive to light, but at this present time were not under the influence of an acute attack.

A physical examination showed the patient to be apparently in good health, no constipation, no apparent evidences of bowel trouble. There were none of the usual signs of autointoxication, such as drowsiness, lassitude and inattention to details of business, etc. The patient was unusually active and bright mentally. Naturally the suspicion was that the etiology was due to inherited condition. The Wassermann test was made, also a tuberculin test, in both cases very carefully, showing negative results. At this time I did not suspect an autointoxication, as there were none of the general symptoms usually occurring in that condition. As the left eye had good vision for distance and fair for near, I did not continue the use of atropin in this eye, but I put the right eye under frequent instillations of atropin, also increasing doses of dionin, putting the patient on continued increasing doses of potassium iodid. Under this treatment absorption progressed slowly, and the pupillary margin of the iris began to break away from the exudates binding it to the lens capsule. This treatment was kept up for nearly two months, with such a surprising result that the patient was able, at the end of this time, to read with difficulty ordinary newspaper print, easily the larger book type.

During this time there were no attacks of cyclitis in the right eye, but one or two mild attacks in the left eye. Remember, in this time no atropin had been used in the left eye at all after the first few instillations for diagnostic purposes.

Having had such a brilliant result in the right eye, I was considering putting the left eye also under atropin and dionin. At the progress the patient was making, we were both more than delighted, when all of a sudden I received a

telephone message at my home that the patient had suddenly gone blind in the left eye, the one that we had not been treating. I immediately had the patient come to my office and met her at midnight, when I discovered a very severe attack of secondary glaucoma, with very high tension and almost complete blindness in the left eye. Upon consultation with another oculist, it was not considered wise to attempt to reduce tension with myotics, but rather to take the chances of more exudate following an iridectomy, with a possible hope that it might have some influence upon the cyclitis and iritis.

The operation was performed at once, with brilliant result so far as tension was concerned, with the return of vision as well, but unfortunately, as was explained and looked for at the time, a gradual increase of the exudate occurred over the whole posterior surface of the iris, without a severe iritis. Three days after the operation vision was fairly good, but was gradually reduced by the excess amount of exudate produced.

Just one week after the attack of glaucoma in the left eye, an attack of secondary glaucoma of the same character occurred in the right eye, and a similar operation was performed upon this eye, with the same result. Of course, the patient at this time had very much reduced vision, but the inflammatory processes were very much improved, and the eyes immediately became quiet, and we again returned to our treatment of both eyes with atropin and dionin. At the end of six weeks, sufficient absorption of the exudate had gone on so that vision was very much improved, so much so that the patient could go about by herself, though the space of our iridectomy was still blocked with exudate.

The proof that the absorption was going on rapidly was shown as slowly a bionic iris occurred.

From this time on improvement was more rapid, until the latter part of December, when a very severe attack of irido-cyclitis occurred suddenly in both eyes, without increased tension. At this time I requested Dr. Mack to make a thorough examination of her intestinal tract, and to our surprise, we found a deplorable condition, Dr. Mack reporting that it was one of the worst cases he had ever encountered. I immediately put her in the hospital, and carried out very thoroughly his suggestions in regard to the treatment of her intestinal trouble. Almost immediately the improvement was perceptible in her attack of cyclitis, the eyes at once quieted down, and absorption went on.

At the end of two months the eyes had become so much improved that I decided to perform a preliminary buttonholing of the iris of the right eye, through the space left by my former iridectomy. The result was so good that the patient is now able to go about and take care of herself.

A rather singular accident happened to the left eye; very suddenly the entire exudate in the iridectomy space and in the pupillary area gave way from the anterior capsule of the lens and the whole was found one morning projected against the posterior surface of the cornea.

The patient has up to the present reading had no return of her iritis or cyclitis. She has been kept strictly upon a non-protein diet, with occasional returns to the treatment of the intestinal tract.

This case shows very plainly that the etiology of it was due to the intestinal disturbance.

The next case that I report is a rather singular one given to me by Dr. S. M. Hager.

For three and a half years the patient suffered with phlyctenular keratitis. No history of rheumatism, gout, syphilis or trauma. Had in this time several attacks which were relieved with boric acid, atropin and salicylates, with potassium iodid; about three or four attacks in the two years following the first. About a year ago he suffered from a very severe attack in which the iris was involved, a kerato-iritis, which yielded very slowly to the usual treatment. In October he had a recurring attack of kerato-iritis. It was found that he had a very chronic constipation, the bowels only moving three to four days apart, and

then only when some purgative was taken. He was dull, sleepy, tired and devoid of energy, etc. Suspecting that his intestinal tract might have something to do with the kerato-iritis, he was referred to Dr. Mack. After being under treatment for his autointoxication, a change in this kerato-iridocyclitis was very marked indeed, and at the present time the eyes are quiet, without evidence of disease. For this case I am indebted to Dr. Hagar and Dr. Milton H. Mack.

The last case is one of entirely different character from the others. Mr. H., whom I had fitted for glasses some two years ago, came to me requesting a change of glasses. Upon examination I found that the vision of the right eye was reduced to about 6/24, the left eye remaining the same as before. Upon dilating the pupil, and examining the fundus I found several patches of chorioidal inflammation somewhat away from the disc and to the temporal side. By their appearance the disease could not have been of very long duration. Without further questioning, I had a test made to find out whether he was suffering from autointoxication, and found what I was looking for, not a very severe condition, but sufficiently prominent to make me feel sure that here was the cause of his chorioidal trouble. I at once put him upon a non-protein diet and intestinal flushings, and within a very short time there was evidence of the subsidence of the acute chorioidal inflammation, and vision improved to about 6/12. At first he was rather a faithful patient to follow instructions but lately he has not seen fit to continue absolutely upon a non-protein diet, but there has been no return of the acute symptoms of chorioiditis. His general health has improved very much indeed, and he is a man eighty years of age.

In the summer of 1911 I discovered that my ability to read for near would be interfered with by some opacity of a diffuse character, in both eyes, more particularly the left. In attempting to read, there would occur a blur over a large portion in the central line of the page. This was yellow in character, having no definite form, except very nearly circular, a hazy mass. The density was about equal in all sections. It grew so slowly that at first it did not annoy me, but by the first of September it became quite difficult for me at times to read fine ordinary newspaper print. By sudden shaking of my head I could dislodge the opacity sufficiently to enable me to read for a few seconds at a time.

Undoubtedly I had the commencement of a chronic cyclitis, as other opacities of a different character were also visible, but the diffuse one was the most annoying.

Following an attack of erysipelas the year before, I had swollen feet. Thinking that it possibly might be due to some kidney trouble, I had a very thorough urinalysis made, at which time it was discovered that I was suffering from a bad case of acidemia and indicanuria. The general symptoms that had followed my attack of erysipelas were the general lassitude, considerable loss of memory and inability to concentrate my attention on one subject for any length of time. A general sluggishness developed as well.

I at once put myself on a non-protein diet, also the usual treatment of intestinal flushings every night. After following the vegetable diet for some time, a decided improvement of my general health was apparent. Also after about four months I recognized a very decided decrease in the intensity of the opacities in the vitreous. The general symptoms also continued to improve, so that the opacities were scarcely visible. Having been on a non-meat diet for more than a year, I am now indulg-

ing very sparingly at this time on a mixed diet, though keeping up the flushings.

That I might determine fully whether the chronic cyclitis was due to autointoxication, I refrained from all other treatment of the eyes. I have now been on a non-protein diet, with the exception of a few trial meals, since a year ago last September. I find that the diffuse opacity of the right eye has almost entirely disappeared. That in the left is a trifle more prominent, but in both eyes, they have so nearly disappeared, that it is at only rare intervals that I become conscious of their presence, and that only when I look for them. The individual opacities have also been very much modified in character, so much so that I hardly recognize them, except on special occasions.

These cases are undoubtedly of autointoxication type, proved so by all promptly getting better under treatment of the toxic condition only.

Because of the success of this series, we must not conclude that all diseases of the uveal tract are due to autointoxication. Yet we should be on our watch in every case of uncertain origin of diseases of the uveal tract.

The subject is so new, and we know so little about it, that one can only give the bare clinical facts, as in the above series, hoping that in the future we will find out more about the toxic conditions.

Feb. 20, 1913. Since the above paper was read, and while on a mixed diet, I found in my own case, about January 1, that the opacities were rapidly returning, and my urine again showed large quantities of indican. I again returned to a non-proteid diet and at this date find that the opacities have again nearly disappeared. That the intestinal condition is the source of my chronic cyclitis cannot be doubted. At no time have I instituted any local eye treatment, leaving the cure entirely to the improved intestinal condition. That I shall ever be able to return to a mixed diet is doubtful.

I shall very strictly continue my present diet for another year and then make an attempt to return to a mixed diet.

The only effect upon my physical condition that I noticed from being upon a strictly vegetable diet is that I have not the endurance that I had during November and December, while upon a mixed diet.

DISCUSSION

Dr. Milton H. Mack: This is a very interesting subject. For several years I have been paying considerable attention to it. I have seen some of the cases Dr. Hawley reported. The one he reported in detail was one of the most intense cases of autointoxication I ever saw. The odor emanating from the patient's body was exceedingly nauseating. At the sigmoid I found a mass as large as my fist. It could be broken up easily, and the treatment later removed it. It is now about three years since the subject of eye disease due to autointoxication was suggested to me by an oculist of this city who was a patient of mine. He asked me one day whether I had ever thought of a connection between the two. I had not, but it started me thinking. Within a week a case of iridocyclitis was referred to me. The patient had had recurrent attacks, on an average of every three months, for a period of six or seven years. He said he had consulted nearly every medical man in the city before I saw him. I treated him and a few days ago he told me that he had not had an attack for two and a half years. He must, however, keep his alimentary canal open. If he allows it to become clogged in any way, even for a short time, he can feel something wrong in the eye. These attacks come on with constipation, as a rule. There is mental depression in

every case, frequently headaches. I have seen six or eight of these cases so far. A temporal headache usually initiates the attack. Examination of the urine shows a marked indicanuria in nearly every case. In the case of the physician I mentioned there was an enormous dilatation of the stomach, and I think he then had an ulcer of the pylorus. He refused treatment for the stomach condition. The case Dr. Hawley reported, which was referred to me by Dr. Hager, I have had under observation for a short time only. There were six or seven attacks within a period of two or two and a half years. They were very severe. Ulcerative keratitis and iridocyclitis were present. It was only a week or ten days when the treatment gave the patient relief. The majority of these patients are, as a rule, heavy meat eaters. I take them off the proteid diet, put them on vegetables and fruit, produce elimination by the bowel, kidneys and skin, by means of intestinal irrigations, which I give myself, but I do not use them as Dr. Hawley suggests. I use recurrent enteroclysis at a high temperature, generally 115 to 125 degrees F. I pass the tube into the bowel and allow from one-half to one pint of water to pass into the intestinal canal. This is about all the patient can take with comfort. This is allowed to siphon out and then I fill the bowel up again, repeating the procedure until I have used from one to two gallons of water. This stimulates kidney action, and also relieves the intestinal canal. It gives free elimination from all sources. I have three patients under observation now in whose cases there is some doubt as to the exact etiology of their trouble. They have all improved, however, and I am keeping them under observation to see what result I am going to have. The proof of the pudding is in the eating, and that is the only way we can demonstrate that these conditions are due to autointoxication. It seems almost impossible to conceive of treating an irido-cyclitis or an ulcerative keratitis by colonic flushings, but when you can see these cases clear up as I have in the ones that have come under my observation, you will become as firm a disciple of this method as I am. Unless you are absolutely positive of the cause, begin at once with elimination. The result will astonish you. I take no chances with these patients treating themselves, as they will not do it properly and then the physician is blamed for the failure. So much depends on the proper handling of these cases that I do not wish to assume the responsibility when they take the flushings themselves.

There is no question, that many cases of blindness might have been prevented had the cause of these disturbances been known and the proper treatment instituted.

SUGGESTIONS FOR FACILITATING THE EARLY TREATMENT OF MENTAL DISORDERS *

H. J. SMITH, M.D.

Assistant Superintendent, Watertown State Hospital

WATERTOWN, ILL.

The treatment of mental diseases is not an encouraging task, especially if complete restoration of mental health is taken as the index of success. Under favorable conditions it is doubtful whether more than 20 or 25 per cent. of recoveries are to be had. These figures seem the more insignificant when compared with the recovery rates of hospitals for general physical diseases. In all fairness to the practitioner of mental medicine I feel it should be said that his failures are more obvious than those of his more fortunate colleagues in general practice. The internist

*Read before the second annual conference of the Illinois Society for Mental Hygiene, held at Chicago, January 18-25, 1913.

does not mend the leaking valves in organic heart disease; the diseased kidney of the chronic nephritic cannot be restored to normal integrity by all the arts of man or nature, but the affected individual may with his physician's help live a life of usefulness and comparative comfort. The alienist, on the other hand, in his failure to solve the riddle of dementia praecox and kindred disorders finds himself confronted by an army of dependents filling our state hospitals for the insane, a sad monument to his efforts.

Prophylaxis must ever be the hope of society in dealing with the problem of insanity. General paralysis of the insane is a fatal, incurable disease; but syphilis, its main etiologic support, can be cured and should be preventable. The proper education of those children who show early outcroppings of neuropathic and psychopathic states may prevent the occurrence of functional psychoses later in life. The study and teaching of prophylaxis is, I take it, one of the objects of this and similar societies. The field is stupendously large and extensive results should not be expected immediately. Much depends on popular education, and this takes time.

Meanwhile the matter of treatment for those who are now public charges must not be shoved aside because the outlook is not promising. In mental disease as in physical maladies it seems logical to assume that improvement or recovery should be more easy of accomplishment when the case comes under treatment in the incipient stage. The importance of early treatment is indicated by these facts: 80 per cent. of recoveries occur during the first year of the disease; on the other hand, 40 per cent. of the hospital death-rate occurs during the first year of residence. This percentage is made up in part of cases of senile dementia and general paralysis of the insane which have been cared for at home until the disease has reached an advanced stage. In these cases fatal termination is inevitable. But there are included also many cases of the acute recoverable psychoses. These latter cases are frequently kept at home until their condition becomes very serious, and the patients may then be committed and removed several miles to a state hospital. Many of these cases I have admitted with pneumonia, possibly due to the exposure of the patient while in a weakened state. These occurrences are to be regretted — the more so because the prognosis as regards mental recovery is good.

There are many reasons why cases are not brought under treatment earlier. The family and the physician in charge of the case may not realize the nature of the symptoms until the condition is far advanced. The relation between the disease and its causative factor is not seen, and they see no reason for taking the patient away from his home environment. They may attribute the disorder to a blow or fall years before, or perhaps to prenatal influences. Many general practitioners think there is little use in trying to treat mental disease and they may inform the family that it is a little nervousness that will soon be recovered from. However it may be, many patients come in with a history of several months' or years' duration of the disease, and favorable results are not to be expected from hospital treatment at the stage of the disorder presented.

The active campaign of public education in regard to tuberculosis is now producing good results, and it is to be regretted that the same plan has not been carried out in regard to insanity. Meetings and exhibits similar to this could be held in other cities of the state and the public invited. With the cooperation of men and women in the state service I believe much could be done to dispel many of the mistaken ideas entertained toward this problem. That there is need for such movement, I think no one will deny who is at all conversant with the facts. Adolf Meyer, in the *Journal A. M. A.*, for June, 1910, says in regard to this matter: "To judge from contact with many trustees and visitors these institutions (state hospitals) are really little known by the public, little known even by the authorities controlling these hospitals, and by the judges and the average physicians and other persons likely to be appealed to for advice when the conduct of the patient becomes difficult to control." I might quote two examples illustrative of lack of confidence in the state hospitals. In the first case, a well-to-do farmer had brought his 20-year-old son for treatment, and when asked for the history of the case seemed rather indifferent, and finally said, "It's no use, doctor, I have had him to a specialist who says that he has an incurable disease and will not live over a year." He produced letters from this doctor to support his statement. It developed that he had taken his son, on advice of his family physician, to a large city for expert diagnosis. Evidently he did not fall into good hands. An x-ray photograph of the patient's skull showed unduly heavy frontal eminences. There was also a partial paralysis of one lower extremity accompanied by atrophy of certain groups of muscles. On these findings a diagnosis of general paralysis of the insane was made, and it was explained to the father that this was an incurable, fatal disease. No Wassermann test had been made and no history of syphilis obtained. I could see no connection between the paralyzed limb and the mental symptoms, which were frankly those of the maniacal state. Laboratory tests strengthened this opinion, and I later found by writing to another hospital that the young man had suffered from an attack of anterior poliomyelitis, which accounted for the paralysis. The patient is now practically recovered and is back at his former occupation in little over a year's time since his admission. Within sixty miles of this patient's home was a state institution for the insane, where any member of the medical staff could have given the father better advice than he received. In the second case, a young man had brought his wife to the hospital after having maintained her at a private sanitarium as long as his limited means permitted, and had consented to her commitment as a last resort. He was taken through the receiving building and seemed greatly interested and remarked that he did not know that there was a place like this in the state where mental cases could be cared for. When asked what he had expected to find, he replied, "I thought an asylum was a building like a soldiers' barracks with a big yard enclosed by an iron or board fence where the patients could be turned out by day, herded by attendants to keep them from hurting one another and kept under shelter for the night." This man's idea of a state hospital is not at all

rare among people who have never had occasion to come into contact with the state institutions. False impressions are created by sensational newspaper stories of abuse alleged to have occurred within hospital walls. One frequently sees articles about inmates supposedly insane who have been deprived of their liberty by designing persons for the purpose of obtaining control of property. Political attacks are conducted for personal gain at the expense of the public welfare. Unscrupulous members of the legal profession who do not hesitate to make damaging statements in prosecuting writs of habeas corpus may promote the idea on the part of the relatives that the patient is being deprived of his liberty without adequate cause.

Our institutions were formerly largely custodial. Mechanical restraint was freely and excessively used. The reputation of the old custodial institution, unfortunately, still persists in the popular mind, and hampers the work of the modern hospital.

The lack of proper cooperation between the general practitioner and the state hospital is an important factor in keeping many cases from coming earlier under trained observation. The family physician is the first to see the greater number of cases, and with him rests the responsibility of advising the family in regard to the best course to pursue. Too often he has not had the requisite training to do this. The average medical curriculum makes little or no provision for the study of psychiatry. This matter has been the subject of a symposium at a recent meeting of the American Medical Association, and the subject has received better treatment in the group of papers presented there than I can give it here. In the last issue of the *Journal of Abnormal Psychology*, Adolf Meyer has given his views on the desirability of making psychology a part of the medical course.

Our form of commitment, with its attendant evils, is another factor which keeps many patients from coming to the state institutions until their mental symptoms are very pronounced. In most states a legal process, resembling that used in criminal cases, must be gone through before a patient can be placed under treatment in a public institution. His resentment is aroused by the entrance of an officer of the law with a warrant for his arrest and removal to the detention ward, or as is too often the case, the county jail. He may be compelled to listen to testimony from his relative, his friends and his physician. He witnesses the making out of legal records to be filed at the court house, where they will remain even in the event of his early recovery as permanent records of his mental incompetency. On the other hand, the patient may have no objections to entering a hospital. The judge may not wish to issue the order of commitment unless threats or evidence of violent tendencies can be shown, or may insist that the doctor characterize the patient as insane before he will issue the order. This is inconsistent with our method of treating the sick. We do not wait for a case of small-pox or diphtheria to develop symptoms of an alarming nature before instituting treatment and quarantine. The delirious typhoid or pneumonia case may be taken to a hospital, restrained in bed if necessary, and subjected

to treatment according to his physician's orders without any time being lost over legal formalities. The voluntary commitment law was designed to cover this class of cases. Illinois, Connecticut, Massachusetts, Rhode Island, Pennsylvania, Michigan and New York now have such laws. It is obvious that this provision can apply to but a limited number of cases. Many disorders, by their very nature, render the patient incapable of taking this step in his own behalf. Other cases react to delusions in a dangerous manner, present a strongly antisocial attitude, and must, of necessity, be committed. There seems to be some difference of opinion among hospital authorities in regard to the desirability of voluntary patients. It is true that they may be a source of trouble. In some instances they do not cooperate well, and may insist on leaving the hospital at a time when their condition does not warrant it. They require a good deal of attention, and do not like to associate as a rule with all types of mental cases. Manhattan State Hospital in New York has a separate building for voluntary cases, and I believe this is desirable where the hospital has the room to afford for this purpose. I have written several letters to hospital superintendents where the law is in operation. All replies are favorable. Dr. W. L. Russell of Bloomingdale Hospital, New York, says he considers the procedure a success. More than one-half of his patients for 1911 were voluntary cases. Dr. E. N. Brush, of Shepherd and Enoch Pratt, states: "I see no reason why patients should not come to this and similar hospitals as freely and with as little legal formality as they enter general hospitals." During the last five years more than one-half the admissions to that hospital have been voluntary. Butler Hospital, Rhode Island, reports 46 per cent. of admissions voluntary. The state hospitals of New York received 312 voluntary commitments in 1911 against 6,947 regular. The private hospitals, under state license, received 832 voluntary and 387 regular. The Hartford Retreat, Connecticut, received out of 160 patients, 90 voluntary. It has not been possible to estimate the number of voluntary commitments in Illinois, because these statistics have not been compiled. Watertown State Hospital admitted in 1911, 282 cases, of whom 70 came on voluntary application. This is a better record than I have found for any other state hospital. This large percentage I believe to be due to the fact that the hospital is in a rural district and seems to stand in a closer relation to the public than state hospitals located near the larger cities. Many of the county judges and general practitioners cooperate with the institution in this regard. The newspapers are favorable in their criticism of the institution, and political attacks on the management are seldom met with. The medical staff takes part in the meetings of the county medical society, and the physicians of that organization seem to be friendly in their attitude toward the hospital.

On examining the records of voluntary cases at the above hospital, I find that it has been necessary to resort to regular commitment in less than 5 per cent. The percentage discharged as "recovered" and "improved" is much higher than the average hospital rate. This indicates that the acute case applies for treatment voluntarily more often

than the chronic. It should be added that this percentage is increased to quite an extent by cases of acute alcoholism, which show tendency to prompt recovery. On the whole, I believe the procedure is a success and worth retaining.

While voluntary admission may lead to earlier treatment in many instances, especially where the territory is largely rural, as at Watertown, it does not seem to be made use of to the same extent in larger cities. In addition to this fact, many patients who would seek treatment do not wish to enter state institutions. To meet this objection, it has been suggested that mental wards in general hospitals, or separate psychopathic hospitals be established. Patients could be brought to these hospitals without publicity and kept under observation and treatment. Commitment to state hospitals could be had in those cases in which it seemed desirable. This plan has met with numerous objections. One physician, discussing a paper on this proposition, said that he knew it could not be successful because he had taken a mental patient to a general hospital and the man had jumped from a window and broken his leg. I might reply by citing a case of an interne at a general hospital who fell ill with typhoid, jumped from a window while delirious and died soon afterward. That hospital still treats typhoid fever cases successfully. It should be understood, however, that mental cases cannot be cared for in the same wards that accommodate other cases. There must be especial equipment, similar to that used in the best equipped type of private sanitarium. That a mental ward can be operated in connection with a general hospital is shown by the experience of the general hospital at Albany. Nine years ago Pavilion "F" in that hospital was opened to mental cases. There have been received 2,156 patients during this time, and the managing board reports that it considers the plan a success. The Pavilion received no committed cases. A ward is maintained at Bellevue Hospital, New York City, for this purpose. As commendable features may be mentioned: many patients are brought in by nurses sent out from the hospital and commitment papers are made out by a resident alienist. I am told by physicians who have visited this institution that it is by no means adequate because of the large number of cases coming up for commitment in that city. Mental wards are maintained at St. Francis Hospital at Pittsburgh, and at the Boston City Hospital. The first state psychopathic hospital was established in connection with the University of Michigan in 1906. Patients are received for treatment and scientific investigation; clinics are held for medical students, and afford a valuable addition to the equipment of their graduates. In Canada, Dr. D. Campbell Meyers has agitated the matter of mental wards in general hospitals, and such provision was made by the Government in 1906 at the Toronto General Hospital. Similar wards are maintained in Munich and Berlin, largely for clinical purposes. Mr. Henry Maudsley of London has urged, without success, the establishment of an observation hospital for mental cases, to be devoted to the following purposes:

1. The early treatment of cases to prevent, when possible, commitment to an asylum.

2. Research work on causes and prevention of insanity.

3. Educational; a clinical school for instruction in diagnosis and treatment.

Dr. John Macpherson, Commissioner of Insanity in Scotland, said in 1907: "What we want are psychopathic wards apart from our asylums. We are once more in the thick of an argument about the institution of mental wards in the Royal Infirmary."

The experiment of having wards for mental cases in general hospitals is not new. We find this provision made by an act of Parliament in Paris in 1660. One hundred years ago beds were set apart for this purpose in the Pennsylvania General Hospital. I find no reference to the results achieved.

The arguments in favor of the mental ward may be summarized as follows:

1. It is hoped that cases would be brought to the hospital earlier.

2. Recovered cases would be spared the recollection of having been adjudged insane.

3. Cases could be kept under observation pending commitment, and the burden of state institutions could be lightened by avoiding the commitment of those cases that seem to show a tendency toward early recovery.

4. A dispensary could be operated to advantage in cooperation with social service workers.

5. Opportunities for the clinical study of psychiatry would be afforded hospital internes and medical students.

6. A high grade nursing staff ought to be assured by general hospitals.

7. The services of specialists in other fields of medicine would be available to the patients.

8. Mental cases developing in other wards could be cared for without being removed to a distance. This is an advantage when the patient happens to be critically ill.

In this paper I have endeavored to emphasize the need of bringing the public into closer relationship with the hospitals for mental diseases. By increasing the confidence of the public in the state's provision for the care of the insane, patients may be induced to enter the hospital at a time when the prospects for improvement under treatment are the most favorable. To this end I suggest the adoption of a simpler form of commitment—the free use of the voluntary commitment law where applicable—the establishment of mental wards or separate psychopathic hospitals to stand between the state hospitals and the people. Public education in regard to preventable causes of insanity and the proper care of mental patients should be pushed with the same enthusiasm that has produced such good results in regard to the prophylaxis of tuberculosis. The Illinois Society for Mental Hygiene should receive the necessary cooperation and financial aid to enable it to carry its work into all parts of the state.

OCCUPATION IN THE TREATMENT OF THE INSANE

CHARLES RICKSHER, M.D.

Physician, Kankakee State Hospital

KANKAKEE, ILL.

"In reviewing the slender and inadequate means that have been employed for ameliorating the condition of mad people, we are led further to lament the slower progress of humanity in its efforts to relieve them than any other class of the afflicted children of men." This was written about one hundred years ago by the first American psychiatrist, Benjamin Rush. At that time the insane were just beginning to be freed from the chains which had bound them. Pinel and Tuke, in France and England had inaugurated a new era, and among the hospital men at least, new ideas were being formed as to the care of the insane.

The earlier psychiatrists emphasized the physical basis of the disease and attempted to cure it by physical measures. Blood-letting, purging, emetics and feeding were the principal means of attack. A little later the moral, or mental side, received attention and the discipline of the individual by means of punishment or by means of promises was attempted. Occupation began to be considered as of value in teaching control of the self and as a means of restoring health.

Prichard, in 1837, reports several patients cured by means of occupation and exercise and quotes from a report of the Richmond Lunatic Asylum, which states that out of a total of 277 patients, 130 are actively and usefully employed, viz., 18 in garden labor, 16 in spinning, 12 in knitting, 18 at needle work, 12 in washing, 16 in carrying coals, white-washing the wards, tailoring and weaving, and 12 in learning to read. This is a record that many modern institutions might envy.

Griesinger, in 1845, writes, "Of moral remedies, proper employment of the patient seems the most important. In healthy work, the innate desire of expressing and giving vent to its energies finds fullest satisfaction in the objective world; by constant occupation in forming materials, the thoughts and efforts engross the mind and withdraw it from empty longings and illusions of the imagination; the feeling of success again prepares the way for expansive sensations and therewith self-esteem and confidence return. Therefore, a steady employment of the patient, especially when voluntary, is rightly considered a decided indication of improvement and is frequently the commencement of recovery. Those employments are the best which keep the patient engaged in the open air, as all garden and field labor, which prove of great advantage not only to the lower ranks, who have been accustomed to daily toil, but also to the educated classes, owing to the peaceful and soothing influences of immediate intercourse with nature. In chronic cases the learning of a new and agreeable trade will sometimes engage the attention in a most agreeable way."

In recent years the subject of reeducation and the therapeutic uses of occupation have received especial notice, and in the reports of various institutions it is not unusual to find that from 50 to 70 per cent. of

patients are employed. But this does not mean, although at times it insinuates, that all the patients are employed for the therapeutic value of such employment. In every large state institution a greater part of the work on the farm, boiler houses, laundry and kitchens is done by patients largely with the primary aim of reducing the cost of maintenance, and only secondarily for the sake of the benefit which the patient will receive by being employed.

In the therapeutic use of occupation the underlying condition should be kept in view constantly and a continual effort made to correct the defects in the mental sphere which are so evident. Meyer speaks of *dementia praecox*, the patients suffering from which disease form the largest number of our chronic patients, in terms of disorganized habits. Judd speaks of insanity generally as a form of mental disorganization introduced in many cases by dissociation and settling into an abnormal reorganization. In patients who recover the associative activities return to the earlier normal state; in those in whom the condition is permanent the earlier forms of organization are not fully restored and a chronic dissociation results. But this state cannot be described in simple terms of dissociation, but rather in terms of dissociation with an abnormal association or integration following on the breaking down of the normal system.

From this view we can construct a theory of education which differs from that of the normal child in whom the experiences which result in ideas are being gathered for the first time. In the chronic insane the ideas are present, but are dissociated and the effort should be rather to train them to be associated in lines which are as nearly normal as possible. When one fully understands this principle the mode of attack must be studied with each individual. The dissociation is not the same in every patient and consequently the occupation or training suitable for one would not yield results with another.

La Moure, in New York, has shown what can be done with very demented, untidy patients with intelligent care and perseverance. He took a class of the most demented patients in the hospital and after much urging got them to form into line and march about the room; after a great deal of encouragement they were able to march, and next they were taught to sit in chairs in orderly rows and listen to an instructor. They were then taught to answer questions by writing which they would do even when they would refuse to talk. The instruction then led to dances and occupations with the hands, including basket weaving. Naturally, all this took a great deal of time, patience and tact, but the end-results amply repaid the instructor for all the trouble.

This method is valuable in training the very dilapidated patients, but in the less demented types other means must be used. Every hospital has a great number of fairly quiet and tidy patients who sit about the wards and do nothing. The idleness which affects these patients is due in a great part to the conditions of the hospital. The English speak of an asylum dementia which is caused by nothing more than the interminable dull routine which is not broken by hope, ambition or the ability to

create. This power of creation is inherent in every individual and all the natural instincts tend to force the individual into the creation of something new. When all hope is taken from one, the individual lapses into a dreadful inertia which increases with the years.

Many of these patients, after the acute disturbance at the beginning of the disease has passed, are willing and anxious to work if employment of an agreeable kind is given them. Many who will not work in the kitchen or bakery will do fancy work or light employment. They can easily be led into the habit of doing work which will keep them occupied for the greater part of the time. One must always keep in mind, however, that the employment given is one that will entertain as well as occupy. If the work becomes monotonous the tendency is always to drop it and in hospitals for the insane this is of too frequent occurrence.

Entertainments which the patients themselves arrange often lead to an interest in work which is not dropped at the conclusion of the diversion, but may lead into other channels. Dancing, and especially folk dancing, has been of great value in stimulating one type of the chronic patients.

In the practical application of occupation the improvement of the patients' condition should be the primary aim. The money which can be made by the sale of his creations and the money saved by his work should always be secondary. Too frequently, even where the therapeutic uses of occupation is most firmly urged, this is forgotten and the aim is rather to produce something which will sell rather than something which will occupy the patient and interest him. If the articles which are made have a pecuniary value and can be sold or used in the institution so much the better, but great care should be used in the sale of these articles not to inculcate in the patient the idea that he is turning out work for which he receives no recompense.

To aid the patient the physician should know what his condition is, how far he is disorganized and what occupation is suitable for him. For this is necessary physicians who have an insight into the mental disease and who can use the information which they have collected in their examinations. The instructor should be temperamentally a teacher and in sympathy with the effort to aid these patients. The instructor should be able to watch the patient; able to tell whether the occupation is of value to him, whether his interest is lagging, and if so, transfer him to other work.

In introducing therapeutic occupation into an institution one has to surmount many obstacles. The routine is to be disturbed a little and this is bitterly opposed by the hospitalized attendant. The resistance shown can be overcome, however, by the use of a little tact and firmness. It can be pointed out that the more the patients work the less trouble the attendants will have with them, the ward work will be easier and the routine will run more smoothly. In the patients who have been in the hospital for some years one meets with certain objections, which have to be overthrown. One patient says, "The work I do is sold for the benefit of the amusement fund. I never go to the entertainments and I object to

them on religious grounds." "My husband did not send me here to work, he sent me to be treated." "I didn't come here because I wanted to, and I am not going to work." These are samples which show what one meets. Some of them do take to work from the very weariness of their idle life, but this is not a motive to be relied on, for in other cases the love of idleness grows by indulgence, until all inclination to work disappears. To meet these objections one should point out that the way out of the asylum lies through their ability to take care of themselves, which can only be shown by their actions and their work. Rewards of various sorts are of great value. With the women a new dress or ribbon, a bit of candy, even the privilege of picking out cloth for a dress and having it made in the sewing-room, have been of great help. For the men an addition in the diet, an extra allowance of tobacco, quiet quarters have been used. In some of the English as well as in some American institutions the patient receives certain metal tallies which pass as currency in the institution store-room. They may be exchanged for tobacco, writing paper, candy, fruits, etc. Mercier recommends that the face value of the tallies be kept low so that a patient in a week could earn a number of them. He would probably value more a large number of them by which he could buy a larger variety of commodities, than a smaller number of the same aggregate value.

The time the treatment should begin and in what types it is most beneficial are rather important points. In the acutely disturbed, in the stuporous conditions and in the very depressed, retarded or agitated patients the field is limited. Some of the excited patients can work and do very well, but in the hypermanic conditions the mental state of the patient precludes any attempt at employment. As soon as the patient improves, however, to a point where his thought can be concentrated on what he is doing, occupation of some kind with exercise in the open air is especially valuable. In the convalescent states of practically all the psychoses occupation is indicated and aids the individual in returning to his normal condition.

In dementia praecox occupation is indicated as soon as the acute outburst has passed and before the inevitable mental deterioration is established. It should be at first fairly mechanical, but passing into more complex work as soon as the patient is able to perform the intricate employment. In this way, as soon as one habit is formed another is taken up and the individual's disorganized mentality is led to as nearly a normal state as is possible. It is to be kept in mind that habits do not develop in all their stages at a uniform rate and that a rapid improvement may be followed by a period of slow development which gives way to periods of rapid growth.

The occupation selected for an individual should be suited to his intellectual ability, his normal as well as to his present intellectual level. This may permit only of the most simple calisthenic exercises, dancing in groups, as in folk dancing, or only the most elementary routine work. In other cases the more complex basket weaving, rug weaving, embroidery, making paper flowers, etc., may be started at the onset.

The number of occupations from which one may choose is a large one and includes the kindergarten dances, marches, folk dances and games of various kinds. The employment varies according to the sex. For the women we have the tearing and sewing of carpet rags, hemming tea towels and window curtains, fancy work such as embroidery of varying degrees of complexity, stenciling, basket work, bead work, and even the more difficult employments, as painting china and book-binding.

For the men the simplest occupation is that of picking hair for mattresses. Then the varying degrees of farm and garden work, work in the shops or grounds. In one institution the men were formed into a carpentry class and repaired all the old furniture in the institution. They may be taught to paint and put to work painting the beds.

All of these forms of occupation may be made profitable, but the profit side should not be emphasized. It does not require a large outlay of capital to institute them, but it does require a great amount of time and careful supervision. Without this last one will see in a very short time that his class in occupation, which started off so enthusiastically, dwindles and fades. As one of my patients who had been instructing the other patients said, "They start off well, but the interest soon fades." The instructor will find that this failing interest is one of the most significant symptoms which arises, and to counteract it will require all her ability.

The objects which the patients make should be useful and at the same time as beautiful as possible. The instructor should endeavor to train the patients who oftentimes have only the most elementary ideas of color and designs, into discriminating between the beautiful and ugly. This will be of a distinct advantage when the patient leaves the hospital and will repay any effort made. It requires as much labor to make a basket in which there is a decided lack of harmony in the colors as it does one in which the colors blend, and if the objects are offered for sale, those which are pretty will bring a greater price even if the workmanship is not so good.

In concluding we may compare the objections to and the benefits derived from supervised occupation. The principal objections are: (1) Cost of material and instructors; (2) interruption of the routine; (3) the lack of benefits in the method. The first objection is easily overcome; the cost of the material which must be purchased is slight, and the sale of one article will pay for more than enough material for ten articles. One skilled instructor is required to supervise the groups, but the attendants and patients may be taught to aid in the teaching and good results achieved in that way. The second objection really has no foundation. In the majority of hospitals the routine is deadening, and anything which will break it should be hailed with delight. Some men hold that the only real exercise needed in the insane is rest. This is probably true in some acute conditions, but where the disease is wholly mental and the patient is physically sound for many years, this objection has no weight.

The benefits to be derived are: (1) The employment of a large number of patients, either as participants or spectators, in some occupation which causes them to be less introspective; (2) the breaking up of a day full of

monotony and from which all hope and ambition is removed into one which, for several hours at least, the individual has some real reason for existence; (3) the reeducation of patients and the training of habits which will permit them to go out into the world and lead a more or less self-sustaining life. If one chronic dementia praecox patient can be so trained that he is able to support himself outside a hospital the state is saved more than the salary of an instructor who may be able to teach others.

The therapeutic use of occupation is not a panacea. Not all the patients who are capable of being taught can be educated to a point where they can be self-sustaining, but if used rightly occupation will turn our large institutions into real hospitals and not large boarding houses where the insane are restrained. The idea has been gaining ground rapidly in the last few years, and in a short time we may say, to paraphrase Conolly, "lack of systematic occupation in an institution for the insane is synonymous with neglect."

DIFFUSE AND GENERAL PERITONITIS WITH A PLEA FOR EARLY DIAGNOSIS *

H. M. HAYES, M.D.

PEORIA, ILL.

Professional men of all types when selecting a subject for a scientific thesis are unconsciously prone to choose one full of victories, but I assure you that feature did not prompt me to select general peritonitis as the subject of this paper this evening. Indeed, I am regretfully conscious of my failures in dealing with this malady.

While I have little hope of calling your attention to anything new on this subject, yet it is of such grave importance to every general practitioner, as well as surgeon, that it cannot be too often considered.

Unfortunately, the terms *Diffuse* and *General Peritonitis* have given rise to considerable discussion as to their exact contra-distinctions. Some writers consider the terms of identical meaning, as regards extent of inflammation; others consider spreading and diffuse as synonymous, while others insist that, when the cecum, appendix and three feet of ileum are involved, it should be considered diffused; more extensive than this, general peritonitis. But from an anatomical standpoint I would favor the terms free peritonitis, and circumscribed peritonitis, referring to the encapsulated form as circumscribed, regardless of the size; but the terms are more or less arbitrary. The more one sees of intra-abdominal pathology the greater becomes his reverence and affection for the diagnostic ability of the able practitioner.

I once heard Dr. J. B. Murphy, of Chicago, say to an intimate friend-doctor: "As much as I love you, and as much as I appreciate your business, if you are to continue procrastinating in this class of cases, I want

*Read before the Peoria City Medical Society.

you to send them to the other fellow." However, the profession should be charitable to one another until they become nearer a unit as to the time and manner of treating this disease.

The young surgeon's reputation is quite dependent on the diagnostic ability of his medical friend. He knows almost intuitively when called to certain neighborhoods just about whose services are most needed, his own or the undertaker, and too often the wrong man is called. It is not my desire to criticize any member of the profession; none of us are infallible, but I do unhesitatingly make an earnest plea for early diagnosis in this class of cases. Has any one ever lost a case of peritonitis from too early an operation? The answer is necessarily in the negative. This suggests another question, do we ever operate too late in peritonitis? The answer, of course, is a sad one. The next logical question that confronts us, is there a *safe time* between the early and late hour for operation? Right here is where the surgical profession is hopelessly divided. Any number of surgeons would be in one accord on first hour operative interference, when seeing a patient in a beginning attack of peritonitis, but this same number of operators on seeing the same patient on the third, fourth or fifth day of an attack of appendicitis (our most dangerous and common source of peritonitis) would be divided in their opinion as to operative procedure. So we have third day operators, fourth day operators, fifth and sixth day operators. Can you blame the medical man for late cases and high mortalities?

The late Joseph Price, of Philadelphia, to my mind the surgical wizard of his time, in dealing with abdominal infections said: "It is useless to discuss operative procedures until we have established some unity of opinion as to when to operate in peritonitis." His dogma always was, "Operate the first hour at any stage." He further states that "when you begin to make differential discussions as to the time to operate on various types of peritonitis, as to whether your infection came from a ruptured appendix, suppurative gall-bladder or a pyosalpinx; on account of some forms of inflammation being more virulent than others, you confuse the general profession and yourself as well, but if you possess such knowledge, keep it to yourself. The information is not safe even in your own head."

You have no right to assure the patient or counsel, or ever assume yourself that on certain days you will find a definite pathologic picture. You cannot promise that there will be a fifth or sixth day, neither can you promise a stage of quiescence.

Murphy says, "The day has passed for applying a hot water bottle to the belly and giving the appendix an absent treatment."

If hope and Christian science must enter your professional career, do not mix them with peritonitis, they are incompatible.

I do not mean to infer that there is not a quiescent stage in some cases of peritonitis, but you have no right to anticipate pathologic rest in general peritonitis when the true condition can only be revealed by opening the abdomen.

You are called in consultation during an acute attack of peritonitis, you refuse to operate during the acute symptoms, but promise the patient and family physician to operate if the patient gets well; in other words, if that hoped-for stage of quiescence intervenes before death, you will operate. Any surgeon who procrastinates under these circumstances and death occurs, such death should be figured in his mortality statistics, and if this is not done the operator is picking his cases.

Dr. Price says, "The fire department should teach us our duty in peritonitis," and the responsibility of the case must be placed on some one member of the profession, as divided responsibility breeds neglect. So often a physician will see a case of peritonitis, make the diagnosis and advise surgical intervention. The patient, the relatives, or both, will object to an operation, and the physician in charge will continue to treat the case along medical lines of which he does not approve, with the idea that he has unburdened his conscience by simply advising surgical interference. His attentions should end when his advice is not taken. If we all did this, how much earlier we would get these cases and how our mortality would be decreased.

Early lesions in the abdomen other than traumatic, begin in the mucous membrane, and inflammation of serous membrane is usually due to neglected lesions of mucous membrane. Another plea for early diagnosis and operative interference.

How often we are consulted by patients relating that typical picture of chronic catarrhal appendicitis, namely, localized pains, loss of weight, bad color, chronic indigestion, etc., etc., due to absorption of toxins from a very small area of mucous membrane which has undergone a mild form of inflammation and macroscopically shows but little pathology, but how amazing the benefits derived from its removal. What a God-send it would be to mankind if the profession, as well as laymen, were taught that all cases of appendicitis were fatal unless operated on. We would then be dealing with very small lesions instead of general peritonitis and saving practically all our cases.

I do not wish to burden you with the statistics of different operators, and my own experience has been limited to so few cases, that I would not consider a résumé convincing.

While attending the Surgical Congress in Philadelphia a year ago last November, I had the good fortune to meet the worthy successor of Dr. Price, Dr. J. W. Kennedy, who was Dr. Price's first assistant for ten years, and since his death has carried on his work in his private hospital. I told Dr. Kennedy that I was very desirous of seeing the so-called complete abdominal toilet as executed by his predecessor. The following Sunday morning Dr. Kennedy telephoned me at the hotel that he would operate on an abdominal pus case that morning. The case proved to be a ruptured pyosalpinx. He opened the abdomen in the median line and removed both tubes in a sea of pus, irrigated every crevice of the abdomen with normal salt solution by means of the Price irrigating tube after this fashion: He inserted a cofferdam drain, which truly was a drain, and consisted of four or five thicknesses of gauze

18 inches long, inserted into the true pelvis with a dressing forcep, while the intestines were held back with the other hand. He used no suture in closing the abdominal incision, as that was completely closed by his protruding cofferdam drain.

The following Tuesday morning I witnessed him dress the case, and I never before appreciated what draining a pelvis really meant. I neglected to mention that all abdominal cases were placed in the Fowler position before and after operation.

Notwithstanding my enthusiasm over the principles involved in this procedure, I have not felt that I was justified in adapting them, owing possibly to lack of training in using this radical but scientific technic. I preferred to add to my surgical reputation in selecting a less hazardous class of cases.

I have attempted in the majority of my own cases to exemplify the more conservative and widely accepted procedure, operate at earliest possible hour, get in and get out quickly, as Robert Morris "put it," *"run while the pus runs."* Large gauze drain always inserted at the seat of trouble, remove the appendix if easily accessible, Fowler position before and after operation, normal salt solution, proctoclysis, et cetera.

Some of my cases have gotten well and I think most of them will, following this method of treatment, that is if Nature has been kind to the patient, and we have to deal with circumscribed peritonitis, but in the absence of that divine wall our patients will continue to die under puncture surgery.

PREVENTIVE MEDICINE *

WILLIAM C. BOUTON, A.B., M.D.

Secretary of Lake County Medical Society and Lake County Tuberculosis Institute
WAUKEGAN, ILL.

The doctor's opportunity to protect the public, or more correctly, the science of preventive medicine, had its real beginning a little more than a century ago, but has had its most rapid growth and reached its great development during the past three decades. It existed, however, in an extremely limited way for several centuries. One of the very first preventive measures known was the practice of inoculation as a method of protection against the fearful scourge of former times, variola or small-pox. We can scarcely form any conception now of the frightful epidemics of this loathsome disease, which swept through both heathen and civilized nations during the middle ages. It has existed from the earliest antiquity in Asia and Africa, and in the thirteenth, fourteenth and fifteenth centuries invaded practically all of Europe, and early in the sixteenth century came to America. In Europe alone it destroyed nearly half a million lives annually, and when the Spaniards brought it to Mexico in 1520, it caused fully three and one-half million deaths in its pestilential

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march. Almost all who survived were horribly and permanently disfigured. It is no wonder than that any means of protection was gladly welcomed and a form of inoculation, which had been practiced in China and other Asiatic countries for centuries, was first introduced into England early in the eighteenth century by the wife of an English ambassador to Turkey, after which time and until vaccination was known, this method of inoculation, introducing pus directly from a small-pox pustule under the skin of the person to be protected, was extensively practiced throughout Great Britain. The objections to this method were that while it usually produced a mild form of the disease, a kind of varioloid, it occasionally proved fatal and in all cases being genuine small-pox, although mild, it simply helped to spread the disease and make it much more prevalent.

It was in 1798 that the first real advance in preventive medicine was made, when Edward Jenner, a physician of Gloucester, England, published a paper, making known to the world the value of vaccination. After the publication of his paper he was ridiculed and abused by the profession, but through his persistence was finally allowed to practice his method of vaccination in the wards of a hospital and in a few years it obtained favor and was generally practiced in England, France and America. Later, it fell into disrepute for a time, owing to the fact that certain persons who had been vaccinated contracted the disease a number of years later, it not being known then that revaccination was necessary from time to time.

Vaccination has practically eliminated small-pox from civilized countries and if it were more generally practiced, would utterly remove this foul disease. Vaccination, in spite of all the objection and opposition of so-called anti-vaccinationists and other ignorant and prejudiced people, is absolutely harmless when properly done. Almost all troubles, which are very rare, arise from the simple operation being done by a careless or dirty physician (so-called) or from meddling with the sore or dressing by an ignorant, dirty or refractory patient. Such troubles are simply infections with pus germs and have nothing to do with the vaccine lymph, which is aseptically prepared with every precaution against all germs. In Germany, vaccination is compulsory in infancy and small-pox is unknown. Here it is usually not done until the child goes to school, unless there is a small-pox scare; but it would be wiser for all children to be vaccinated when a year or two old, to guard against possible exposure to a mild case of small-pox or varioloid on the train or trolley car, as it is possible to meet such a case in or near a large city at any time, for in the slums or poor districts, largely occupied by ignorant foreigners, small-pox is probably present somewhere almost, if not all the time. Revaccination should also be tried at least every seven years and more often if there is reason to fear exposure to the disease.

Having devoted so much time to this contagious disease, I shall speak very briefly of some of those pestilential scourges which are known to most physicians of this part of the country only by description, but which

cause untold sorrow and suffering and many thousands of deaths annually in those parts of the world where they carry on their destructive work and where preventive measures are either little understood or carelessly and inefficiently employed. Two of these Oriental scourges, Asiatic cholera and the bubonic plague, would enter our ports at almost any time and destroy hundreds if not thousands of lives if it were not for the most stringent quarantine regulations combined with most careful medical examinations and protective measures constantly enforced. In former days before the nature of these diseases, their causes, modes of dissemination and methods of prevention were well understood, our nation had some very bitter experiences, especially with cholera, malarial fever and yellow fever, and in some parts of the south these destructive but preventable fevers still cause many deaths and much suffering.

Asiatic or epidemic cholera, has had its home in India for centuries, but not before the past century was it widely known in Europe and America. Epidemics occurred in Europe every decade from 1830 to 1900, and in America during the first half of this period, but only a few small groups of cases have occurred in our country since 1873. The disease is characterized chiefly by sudden and violent profuse vomitings and purgings rapidly repeated, accompanied by painful cramps in the limbs and almost intolerable thirst and extremely rapid emaciation, due to the profuse loss of fluids. The mortality is very high, varying in different epidemics from 20 to 80 per cent. of all cases, and death may occur within a few hours and in the worst form of cases in a much shorter time. The duration is usually, however, several days. The cause is absolutely known to be a germ known as the cholera or comma bacillus, its form resembling a comma. The entrance of these bacilli into the alimentary tract in food or drink produces the disease, and prevention consists in absolute cleanliness of hands, food and drink, avoiding alcoholics and all uncooked foods, especially fruits, and the thorough disinfection of the matter vomited and passed from the bowels as well as of the receptacles for them, and the clothing, bedding and body of the patient and anything touched by him. At our ports of entry, every case, where there is the slightest suspicion of danger, or coming from a country where the disease has been reported, is quarantined and kept under medical supervision until all danger is passed. Protective serum has been used with great success in India, where cholera is always present.

The plague, also called bubonic plague, is also an Oriental disease, with India and China as its chief abodes. During the fourteenth century it spread over most of Europe, being known as the Black Death, and in London, in 1665, it destroyed more than 70,000 lives. During the past twenty years it has been more or less active and has appeared in various European ports and also in New York and among the Chinese in San Francisco. The disease begins with a severe chill followed by high fever, accompanied by delirium or stupor, extreme weakness and the rapid and general development of buboes whence its name bubonic plague, these buboes being inflamed swellings of the lymph glands in the groins, arm-

pits and other parts of the body. In the worst cases there may be hemorrhages from the lungs, stomach, bowels and beneath the skin, and pneumonia is frequent. The death-rate is extremely high, ranging from 40 to 80 or even 90 per cent. in different epidemics. Fatal cases end usually in three to five days. Cases that recover are sick several weeks or months, as the buboes heal very slowly. In treatment an anti-plague serum has saved many lives. The cause of the disease is a germ, a short bacillus with rounded ends. Like the germs of several other contagious diseases, of which I shall speak, this germ has a special insect which acts as its host and carrier, by means of which the disease is disseminated in almost all, if not all, cases. The host and carrier of the plague bacillus is the rat-flea, or the flea which is the almost constant companion of the rat, especially the ship and wharf-rats, which infest all ports and vessels and hence carry the disease from one country to another, unless every precaution is taken to prevent these vermin from gaining access to the vessel in infected ports and to carry on a constant and wholesale destruction of them in all ports of entry and these measures our quarantine boards carry out most thoroughly. If the flea would stick to the rat there would be no trouble, but unfortunately it will leave him for human company at almost every opportunity and the bacillus leaves the flea and enters the body either by the alimentary or respiratory tract and begins its deadly work.

Malarial fever, which in its milder and more common forms is known as intermittent fever, chills and fever, or fever and ague, and in its severe forms as remittent fever and pernicious malarial fever, is one of the oldest and best known diseases, prevalent in most marshy or swampy regions and in former times being constantly present in Rome, the Pontine marshes near it and the swamps along the lower Danube and still prevalent in some of the lowlands of our southern states. The reason for its infesting such regions is clear when we understand the cause. I will not take time to describe symptoms, as the various names given tell its most characteristic ones, viz., recurring attacks of chills, fever and usually profuse sweats at regular intervals of usually one, two or three days, and progressive pallor and weakness. All the milder forms recover under proper treatment, usually quinin in sufficient doses, but the severer forms may result fatally sometimes in spite of treatment, the mortality rate in the pernicious forms exceeding 20 per cent. Malarial fever is due to a parasite or ameba, called the *plasmodium malariae*, which varies considerably in appearance in different forms and stages of the disease, but always invades the blood and causes more or less rapid destruction of the red blood-corpuscles. This parasite always undergoes a preliminary stage of development in a certain kind of mosquito known as the anopheles, which transmits the parasite and the disease to its victim during its pleasant little operation of boring and sucking blood. Protection against the disease then consists in the use of mosquito-proof screens for all windows and doors in malarial regions and the draining of their breeding places in all swampy land and the free use of petroleum or kerosene on all places, even puddles and rain barrels where they may

breed, thus destroying them in the larval stage when known as "wigglers." With these measures malarial fever has been largely exterminated.

Yellow fever has been and still is one of the most dreaded and fatal diseases of tropical and subtropical regions, especially the Atlantic coast of Africa and South America, the West Indies and the coast regions chiefly of Central America, Mexico and the Gulf States. The symptoms are chiefly a sudden chill, followed by high fever, accompanied by headache, pains in loins and limbs, restlessness and mental disturbance, sometimes delirium. In severe and fatal cases these symptoms are soon followed by hemorrhages into the stomach and bowels, causing "black vomit" and tarry stools, great weakness and the skin becomes yellow or bronzed, giving the disease its name. Hemorrhages from the nose and other parts of the body and also under the skin may occur. The duration of the disease is usually about a week, but in cases that recover, convalescence is very slow, and may have relapses. The death-rate varies greatly in different epidemics, some being very mild, while in others almost all cases are fatal. Usually mild epidemics give a mortality of 5 to 10 per cent., while in severe ones the death-rate ranges from 30 to 50 per cent. The cause of the disease is a germ—also a microscopic rod or bacillus called the bacillus icteroides from the icteric or jaundiced color of the skin. This also has as its host or carrier a certain mosquito, known as the stegomyia, which also transmits the bacillus and the disease to its victims in the same agreeable way that the anopheles transmits the plasmodium of malarial fever. Without the able assistance of this particular form of mosquito it is impossible to contract yellow fever. As long as the insect is excluded by screens from the dwellings and prevented from presenting his bill at all other times, one could sleep in the same bed with a yellow fever patient, use the same dishes, towel and handkerchief if he chose and be absolutely free from danger, and the same is true regarding a patient with any form of malarial fever living in the midst of a swamp.

Leprosy has been variously described in the Bible and other literature since the earliest times, and exists in all parts of the world, being endemic or constantly present in China, the number of those affected being estimated at 2,000,000, and in India at 200,000, and to a much smaller extent in Japan and the Philippines, Arabia, Persia, Africa, South and Central America, Mexico, Australia, New Zealand and other islands of the Pacific and Indian oceans and in the northern parts of Europe, Canada and parts of our own country, especially California and Louisiana. Its cause was discovered in 1878 to be a germ resembling that of tuberculosis and called the *Bacillus leprae*. I shall not take time to describe the disease, except to say that it is very chronic, lasting for years and producing a gradual ulceration and destruction of certain parts of the body, especially the face, ears, hands and forearms, feet and legs and the nerve trunks generally. It is not nearly so contagious or so fatal as Scriptural accounts would lead one to believe, the contagion being very slowly acquired and many patients recovering from the disease either with or without treatment. The sanitary or protective treatment, con-

sisting in segregation of those diseased, has been practiced since Biblical times, and in Japan, the Hawaiian Islands, Philippines, India, Norway and among some of the British, Danish and Dutch possessions, colonization has been practiced, and a high degree of humanitarian direction been obtained, but in many countries the care of lepers depends solely on charity and religious devotion. Many remedies, including electricity, x-rays and various serums, have been used in treatment with varying results, but every year more cases of leprosy are reported as cured, the disease is no longer neglected and the hope of a specific remedy is steadily growing.

Uncinariasis, or hook-worm disease, is one of the most wide-spread of parasitic diseases, being found in Asia, Australia, Egypt, most countries in Europe, South America, the West Indies and most of the southern states, and occasionally cases are found in the northern states in persons returning from the south, the West Indies or Italy. This disease may be regarded as the oldest of which we have any written record, for in the Ebers papyrus, an Egyptian medical treatise, written on parchment and dating several thousand years B. C., a disease is mentioned which corresponds closely with uncinariasis. The disease has received a great variety of names, a few of them being brick-maker's or miner's anemia, dirt-eating, negroes' consumption and perhaps most common is the unjust term, lazy sickness, which has been given to it among the so-called "poor white trash" of Virginia and the Carolinas. It is most prevalent in rural districts where hygienic conditions are bad, also in coal and tin mines, brick and tile works and in all places where warmth and moisture, combined with filthy habits of defecation (so-called soil-pollution), favor the spreading and development of the hookworms and their larvae, which enter the body of the victim mainly through the skin of the feet, but occasionally are conveyed by dirty hands to the food and drink and reaching the upper part of the intestinal tract either by swallowing or indirectly through the circulation, they develop and multiply there and suck the victim's blood until he becomes profoundly anemic and weak and many cases end fatally. How common and serious the disease is can be judged from the statement of the Porto Rican Commission, that in 1899, 90 per cent. of the peasant population of the island were suffering from this disease, and it is estimated that in the United States 2,000,000 persons are infected. Prevention can only come through the education of the affected classes, teaching them the danger of soil pollution, the importance of wearing shoes, of keeping hands, dishes and food clean, and the significance of so-called ground-itch as the first sign of infection and the discovery and proper treatment by intestinal antiseptics and general tonic measures of all infected cases. The splendid work of the Porto Rican Commission and the more recent Rockefeller Commission for the study of Hookworm Disease will help greatly without doubt in the education of the people and the elimination of this widely prevalent disease.

I would like to say something about other great epidemic diseases found in different parts of the world and causing thousands of deaths.

such as beriberi, occurring in Japan and also in many tropical and sub-tropical regions of Asia, Africa, Australia and America, accompanied by severe inflammation of many nerves, often resulting fatally and leaving those surviving with extensive paralyses; the cause of the disease being still unknown, but believed by many to be due to the eating of improperly prepared rice or certain kinds of fish; also trypanosomiasis, the sleeping sickness, which is due to a parasite transmitted by the bite of the tsetse fly, causing several months of increasing lethargy, accompanied by fever, wasting and other symptoms and ending invariably in death. It seems to be confined to tropical Africa, especially along the lakes and rivers, and causes great mortality among the natives. Many remedies have been tried, but without success, and prevention is all important by avoiding in every way possible the bite of the fly and the isolation of those infected.

Also the Rocky Mountain fever, or spotted fever, occurring in Idaho, Wyoming, Nevada, Oregon and especially in the Bitter Root Valley of Montana, conveyed by the bite of a tick, running its course in from one to three or four weeks with chill, fever, much soreness and aching in the bones, a spotted reddish rash and having a very high mortality, the average being about 70 per cent. in the Bitter Root Valley. Treatment is purely symptomatic and prevention is most important, consisting in avoiding very carefully its host and carrier, the infected tick. I might speak of others much nearer home and receiving much attention at present, such as pellagra, epidemic cerebrospinal meningitis and poliomyelitis causing spinal paralysis, but time will not permit.

I will now take up briefly the familiar diseases, typhoid fever, diphtheria, scarlatina, pneumonia and last but by no means least important, tuberculosis.

Typhoid fever has been known ever since the days of the Greek physician, Hippocrates. It was, however, confused with true typhus fever and other infections and was first described as a separate disease in 1837. The cause of the disease is a germ known as the *Bacillus typhosus*, first seen and described in 1880. It enters the body either in infected drink or food, usually water containing sewage with urine or fecal matter from other patients with the disease, or carried by flies from such matter in privy vaults or thrown out on the ground and deposited by the flies while making their toilet on the bread, butter or other articles on the table, or while taking a bath and swim in the milk or coffee. These are the most usual ways, but there are others, such as the use of milk from careless or ignorant farmers or dairymen, having typhoid fever in their own homes and washing the milk-cans or bottles with infected water or dirty hands soiled by the patient's discharges, or by careless and dirty nurses infecting their own food or drink with hands thus soiled and not properly cleansed and disinfected. There is no typhoid fever without the entrance of the bacillus, and this is probably never inhaled, but always carried to the mouth in one of these ways. Many of them are undoubtedly destroyed by the healthy gastric and intestinal digestive fluids, especially the bile, but in weaker subjects, or where taken in great quantities, many survive, and reaching the lower part of the small bowel, begin their destructive

work and soon invade the blood and other organs; but if the discharges from the bowels and urinary bladder are promptly and thoroughly disinfected and the hands of the nurse and also all soiled bed clothing and the hands of those who gather and wash it also disinfected, there is absolutely no danger of the patient transmitting the disease to others. These precautions ought to be taken in every case for the safety of the attendants and relatives as well as others, but unfortunately they are often either neglected or carelessly done and so the disease continues to spread. The sewage of all cities and towns, especially those beside lakes and rivers, should be disposed of in settling tanks or some other way than by emptying it into the source of water-supply, no matter how large it may be, and if the water is so contaminated, it should either be treated by efficient sand filters and hypochlorite of lime or a Pasteur filter used in the home, or water boiled for at least half an hour if there is any doubt about its purity, and also a systematic campaign of destruction should be carried on against the pestiferous fly and all his breeding places in garbage piles, manure heaps and every dirty barn, stable, privy vault, back-yard and alley, offensive both to sight and smell. If these things could be properly done everywhere, typhoid fever would almost immediately vanish from the earth. It is an absolutely preventable disease and that it prevails so extensively and causes thousands of needless deaths annually is a disgrace to civilization. The compulsory use of antityphoid serum in the army and navy and its increasing use in hospitals and private practice will greatly help in reducing sickness and mortality from this cause.

Diphtheria is also one of the historic foes of humanity, especially of childhood, being known in the time of Hippocrates, and the first tracheotomy or opening of the windpipe on account of this disease is said to have been done by Asclepiades, a Greek physician, one hundred years before Christ. The name diphtheria means membrane and was first given to the disease in 1821. True diphtheria, for there are so-called pseudo or false diphtherias, is caused by a germ named from the two men who first described it and proved it to be the cause of the disease, the Klebs-Löffler bacillus. Like all germs, it is microscopic in size, and must be specially stained in order to be seen. It is rod-shaped, from 1 to $2/25,000$ of an inch in length, presents some variations in form, but the grouping of these rods is especially characteristic, being arranged in lines much like Chinese letters, but at various angles. It gains access to the nose or throat, where it begins its mischievous work by being inhaled or having a bit of the membrane coughed directly in, as happens occasionally to the physician, nurse or mother while examining the patient or giving medicine or nourishment. The majority of adults and a fair proportion of children seem to be very slightly if at all susceptible to the disease, and some adults may carry the bacilli in their throats for weeks or months without harm to themselves, but with great danger to their susceptible children or the children of their relatives and friends. Such persons are known as diphtheria carriers, and when made aware of their condition,

should use antiseptic gargles and sprays frequently and take every precaution to avoid infecting others.

This is one of the strongest reasons why promiscuous kissing, especially of children by adults, should be discouraged and quite properly prevented if possible by the parents or guardians of the children. Other and even more serious diseases, especially venereal diseases, are easily transmitted in this way to the innocent victim and the health, if not the life, destroyed. It is needless to add that these infections can also readily be transmitted by the common use of handkerchiefs, napkins, towels, toothbrushes, etc., and the unselfish but unwise sharing of apples or other fruit, candy, chewing gum and plug tobacco. In these ways at least, it is altogether best to avoid economy, generosity and socialism. Diphtheria has largely ceased to be one of the most dreaded diseases of childhood through the general use of one of the most valuable discoveries of preventive medicine—diphtheria antitoxin. By the prompt use of this remedy in sufficient doses and repeated as indicated, almost if not every case can be saved, but each day's delay in its use makes the mortality much higher and after the fourth day from the appearance of the membrane it is almost useless to expect much if any benefit from it. All those exposed, especially the children, should also receive immunizing or protective doses, thereby preventing any extension of the disease to them. By these measures, not only has the mortality of the disease been wonderfully reduced, but its prevalence has also been very greatly limited.

Scarlatina, or scarlet fever, has probably also existed since the earliest times, but was first described in 1660, and first noticed in America in 1735. The cause of the disease has not yet been fully established, but is doubtless a specific germ, probably of the variety known as streptococcus, of which there are various kinds, consisting of round cocci, like berries, arranged in long chains. The disease is found in all parts of the world, but seems most prevalent in Europe and North America. It occurs by far the most frequently in children between the ages of 2 and 10, but no age is exempt and social position has little influence. Epidemics are most frequent and severe in autumn and winter, but may occur at any time. While quite contagious, it is far less so than measles and when several children in a home are exposed to it, one or two may take it and the others escape. The patient should, however, always be promptly isolated and every precaution taken to avoid its spread. This is especially important, as we have not yet any specific antitoxin for it as we have for diphtheria, and it is such a treacherous disease, the cases apparently the mildest sometimes ending fatally, and so many unfortunate sequels or after-effects being liable to occur that no effort should be spared to prevent the infection of others. The children of a family in which a case develops should not be allowed to attend school or associate with other children. In small towns and country places the closing of schools during the prevalence of the disease is to be recommended, but in cities, especially large ones, this is of doubtful utility. It is best in choosing a nurse or attendant to get one if possible who has had the disease and so is immune. The physician should, of course, take every precaution to avoid

carrying the disease to others, although many believe that it can only be acquired by direct exposure to the disease and the danger of carrying is doubtless far less than is generally believed. Isolation of the patient should be as complete as possible and the less there is left in the room of rugs, clothing, upholstery, pictures, etc., the easier and more efficient will be the disinfection of the room after the patient's recovery or death and removal from the room. Disinfection is, of course, by formaldehyd gas, the room being tightly closed for at least six hours, then thoroughly aired. All bed linen and clothing during the course of the disease should be soaked for several hours in antiseptic solution before being sent to the laundry. All discharges from nose, throat, ears, suppurating glands, bladder and bowels should also be disinfected and the patient should not be allowed to leave quarantine until all scaling of skin has ceased as well as all discharges from nose, ears and glands and all signs of inflammation in throat have disappeared. He should then have a complete bath with soap and warm water, special attention being given to hair and ears and this followed by sponging with weak antiseptic solution and then complete change of clothing in another room. Other minor details also need attention, but I will not take more time. In case of death, the body should be wrapped in a sheet soaked in strong antiseptic solution, placed in a tight coffin, which must not again be opened, and funeral should be strictly private. The same rules as regards isolation, bath and change of clothing, disinfection of room and care of body in case of death should be followed in diphtheria and other contagious and dangerous diseases. Scarlet fever is considered by many the most to be dreaded of all infectious diseases which now prevail. It has been estimated to cause 4 to 5 per cent. of all deaths in England and America. The mortality is especially high if complicated with diphtheria.

Pneumonia is sometimes spoken of as the "Captain of the men of death," but it still ranks second to the greatest destroyer of human life, tuberculosis, although at certain seasons and especially in epidemics, it causes even more deaths than the great white plague. Pneumonia constitutes 3 to 4 per cent. of all diseases and causes about 8 per cent. of all deaths, while tuberculosis constitutes about 5 per cent. of all diseases and formerly caused from 10 to 14 per cent. of all deaths, but on account of the campaign of education and the constant warfare against the grim destroyer, it probably does not at present have a death-rate much if any higher than that of pneumonia. About one death in every six is due to one of these two diseases. True pneumonia is called croupous, or lobar pneumonia, to distinguish it from another form of lung inflammation occurring mostly in children and called catarrhal, or lobular pneumonia, but it is not simply a disease of the lungs but is a general infectious disease with inflammation of the lungs as its most marked condition and causing the chief symptoms. The cause of true or lobar pneumonia is a germ called the *Pneumococcus*, or *Diplococcus pneumoniae*, diplococcus meaning double coccus or berry, as this germ is always found in pairs enclosed in a capsule. That pneumonia is not only a contagious, but is also a general disease, is proven by the fact that the pneumococcus is

not confined to the lungs, but is abundantly present throughout the blood and may invade any organ of the body and is apt to invade the meninges or coverings of the brain or spinal cord and cause meningitis. Pneumonia may occur at any age, but over half the cases occur between the ages of 20 and 40. It is most fatal to the very young and the aged and many deaths which are ascribed to old age are really due to pneumonia, which runs a much quieter but a rapidly fatal course in most old people. Among those in young adult life or middle age it is far more fatal to heavy and even to moderate drinkers than to those who seldom or never use alcoholics. A correct diagnosis of pneumonia in a drunkard is almost equivalent to a death certificate, and in an epidemic drinkers are most frequently and fatally attacked. Almost every medicine has been tried in pneumonia with dubious or discouraging results. The outcome depends almost entirely on four things: prompt and correct diagnosis of the disease, its extent and complications; good nursing with all that that implies; the virulence of the pneumococcus which varies greatly in different epidemics and the vitality or resisting power of the patient's system. Medicines are doubtless valuable to relieve pain, to obtain rest, in certain crises, and for the treatment of complications, but they have very little effect on the course of the disease; and plenty of nourishment which is assimilated, plenty of water internally, plenty of fresh air and proper bathing are of far more value than drugs in this disease. In the way of preventive measures, the patient should be isolated and as the pneumococcus is found in the matter expectorated and the disease doubtless communicated by this matter being disseminated in the air and inhaled, all discharges from mouth and nose should be received either in a vessel containing antiseptic solution or on rags which are immediately burned. It will probably be best also to disinfect the excretions from bowels and bladder. After convalescence or death the rooms should be thoroughly disinfected. Nurses and attendants on the patient should be given plenty of rest, sleep and fresh air to increase their resisting power. Weak and elderly persons should, if financially able, spend winters and early springs in the south, as pneumonia is most prevalent at those times.

Tuberculosis may affect any organ of the body, but in its most common form affecting the lungs is known as pulmonary tuberculosis, phthisis, or usually consumption. It is also one of the oldest known diseases, the term phthisis meaning wasting, being first used by Hippocrates, the so-called Father of Medicine. The small diseased nodule or tubercle which is characteristic of the disease wherever found was first described by Sylvius about 1650. It was long believed to be contagious, but this was not absolutely proven by experiments on animals until 1865. The absolute cause of the disease, the germ which produces the tubercle by its action on the healthy tissues, the *Bacillus tuberculosis*, was discovered by Robert Koch in 1882, and most of our real knowledge of the disease dates from that great discovery. This bacillus is a narrow microscopic rod varying in length from about 1/20,000 to 1/6,000 of an inch and usually slightly bent or curved. Like all germs, it must be stained in order to be seen.

Tuberculosis, as already stated, is the greatest foe of humanity. It formerly caused about one-seventh of all deaths and one-third of all those between 15 and 45 years of age, the most active and productive period of life. It has caused more deaths than war, famine, cholera, plague, small-pox and yellow fever combined. About 5,000,000 persons die annually from the great white plague, about a million of these in Europe and 150,000 in the United States. In Germany in 1894, tuberculosis caused 7,000 more deaths than croup, diphtheria, scarlet fever, measles, whooping cough and typhoid fever combined. In Austria, the general death-rate from tuberculosis is 11 per cent., and the hospital death-rate is 25 per cent., the patients coming mostly from the poorer classes. These figures give us a little idea of what a fearful destroyer of life this almost universally present disease is, and yet we know from the discoveries of medical science that it is absolutely preventable if the proper methods are employed. It has been positively proven that the disease is not inherited and the belief is growing stronger that the children of consumptives, instead of being predisposed to the disease, are rather more resistant to it than the children of healthy parents. The children of tuberculous parents do not inherit the disease, but acquire it by constantly breathing the air contaminated by the infected breath and expectorations of their diseased parent or parents. Husband acquires the disease from wife and *vice versa* in the same way. If the children of tuberculous parents are early removed from the infected home and placed in healthy surroundings, they will grow up just as strong and healthy as the children of the healthiest parents, and if the children of healthy parents are allowed to associate much with consumptives, they will almost certainly acquire the disease. The three great principles of treatment are fresh air all the time, night and day, winter and summer, practically constant out-door life, plenty of digestible, nourishing and assimilable food, largely fresh eggs and pure milk, and abundant rest, with carefully graduated exercise, always under the careful supervision of a specialist in tuberculosis and the nurses who work under his direction. I emphasize the matter of treatment being under the supervision of a tuberculosis specialist because the average physician does not understand the treacherous nature of this disease and often makes serious and sometimes fatal mistakes in giving advice to these unfortunate cases. One of the most common mistakes is to advise treatment at home, "stay out of doors and take lots of good nourishing food," and the other mistake, perhaps even worse at least for the patient, is to advise going to Florida, Colorado, New Mexico, or some other warm climate, as though change of climate and plenty of sunshine had some miraculous healing power, whereas the fact is that the climate of Illinois is just exactly as good for these cases as any other, and many of them improve more rapidly in winter than in summer. It is constant out-door life that is needed, not change of climate or either warm or hot air, although much of the advice given them would come properly under the last heading. Much more might be said about treatment, especially the importance of treatment in open air sanatoria and the uselessness if not actual harmful-

ness of most medicines, which disturb digestion and thereby interfere with nutrition, but I cannot take more time for this subject and will say just a few words regarding the most important thing connected with tuberculosis, viz., prophylaxis or preventive treatment, and here disinfection or destruction of the infected sputum is the prime indication, for otherwise this dries, is scattered in the air as dust and inhaled by others, causing more victims. Patients should carry small paper sputum or spit-cups, of which there are various kinds, and these should receive all discharges from mouth and nose and then be destroyed by burning. Spittoons, unesthetic as they are, should be placed conveniently in the halls and wards of hotels, hospitals, sanatoria, factories, stations, railroad trains and trolley cars, and these spittoons should always contain antiseptic solutions and be thoroughly cleansed daily. Spitting on the floors of all these places should be positively forbidden and offenders punished. Tuberculous patients should sleep alone and kissing should be forbidden. The bedclothes, linen, handkerchiefs, napkins and eating utensils should be thoroughly disinfected by boiling at least half an hour. Rooms should be cleansed with moist cloths and swept with windows and doors wide open, or still better, vacuum cleaners used. The dangers of swallowing sputum, thereby perhaps causing intestinal tuberculosis, must be explained and it would perhaps be wiser to rinse out the mouth with a weak antiseptic solution before eating or drinking. Weakly children should be brought up in the open air, carefully nourished, watched during and after acute infections of all kinds, kept but few hours in school, sent into the country during vacations, taught moderation and self-control, and later on, be informed regarding the dangers of alcoholism, sexual excesses and venereal infections. In addition to these measures for the treatment and protection of individuals, it is most important to carry on constantly a campaign of education of the people by publication of the dangers and preventive measures in tuberculosis as is being done in various states, and especially by the excellent pamphlets of the Illinois State Board of Health, the Chicago Tuberculosis Institute and the Ottawa Tent Colony. Also the establishment of open-air sanatoriums for the poor, among whom the mortality is four times greater and the prevalence of the disease many times greater than among the well-to-do classes. Also the building of separate hospitals or at least separate wards for the advanced and hopeless cases of this disease. Also the regulation of the air capacity of dwelling-rooms in tenements, factories and stores, better arrangements for ventilation of churches, schools, theaters and all public buildings and the ventilation of houses, especially the bed-rooms, by wide open windows, both day and night. In Germany the reduction of mortality by 33 per cent. is clearly due to an awakened public intelligence, and our country certainly should not fall behind European countries in this respect. Far more might be said about this fatal disease and also about the so-called minor infections, such as influenza or la grippe, measles, pertussis or whooping cough and others, but I have already taken too much time and must bring this long article to a close.

And now in conclusion, let me say just a few words about the effect of preventive medicine on the physician himself, and will you pardon me if I quote with a few slight changes part of a tribute to the medical profession, which I wrote a few years ago as the closing portion of an article on the water-supply and sewage of the lake shore towns of Lake County, and after reading to the local physicians, it was published by their request in the *Waukegan Sun* for the benefit of the public.

I believe the spirit which leads physicians to investigate the causes of disease and to try to find remedies and means of prevention is essentially the same spirit which prompts men and women everywhere to all good and useful and unselfish deeds. I wonder how many of the dear public ever stop to think what a self sacrificing work that of preventive medicine is. I wonder how many even begin to realize that the work which the Health Commissioner is trying to do is not only injurious to his own financial interest as a physician, but also to the interest of all his fellow practitioners who must assist him in order to make his attempts to prevent the spread of disease successful, for every such prevention of disease simply cuts down the very source of income of some physician. We understand that from the financial standpoint we are all fools in this respect, but no honest and conscientious physician hesitates to do his full share to make the prevention of disease successful, for he realizes that this is his duty to his fellow men and that no one else can perform this most important duty. And yet, strange as it may seem, we constantly meet opposition from the very people whose health and lives we are trying to save and are abused and condemned while doing our duty by antivaccinationists, followers of Voliva and other so-called "faith healers," and by all kinds of cranks and fanatics.

"Greater love hath no man than this; that a man lay down his life for his friends." This was the beautiful epitaph engraved on the tombstone of the grand old physician who was the hero of Maclaren's most touching story of "The Doctor of the Old School," and I believe the same epitaph could be truthfully placed on the headstone or monument over the body of many a faithful, conscientious physician, who has devoted his life to the welfare of his fellow beings in city, town or country practice in every state of this Union. Medical annals are filled with records of its heroes and martyrs, both in peace and war, but I believe no more heroic or self-sacrificing deed was ever recorded than that of the physician in some European city some years ago who was experimenting in a laboratory with the germs of that horrible Oriental scourge, the bubonic plague. Accidentally infecting himself, he realized that his case was hopeless unless he obtained the best of care, but in doing this he must expose at least one other person to fatal contagion. So what did he do? He posted a notice outside the laboratory that no one should enter, locked the door and waited there patiently and grandly through days of great suffering until the angel of death in mercy released his victorious soul from his tortured body. The more I know of the heroes, the sacrifices and the triumphs of medical and surgical science, the prouder I am to be a member of this grand old profession, which I

believe, on account of its wonderful achievements, its prevention of unspeakable suffering, its saving and prolongation of countless precious lives, and above all, its self-sacrificing devotion to the welfare of humanity in the prevention of disease, is entitled to stand side by side with the gospel ministry and the profession of teaching as the highest and noblest of all the occupations of men. These noble professions are united in the life and work of the medical missionary, whose self-denying service to the bodies and souls of humanity in foreign lands resembles most closely the Divine work of the great physician. I am an optimist and believe in the ultimate triumph of right and justice over all wrong, of knowledge over ignorance, prejudice and superstition, of Christianity over atheism, skepticism and paganism, of happiness over sorrow, of health over disease, and finally of life over death. I believe that the grand old medical profession will go on from victory to victory and that long after Dowieism, Eddyism and every other pseudo-religious, faith-healing fad has passed into well merited oblivion, the physician and surgeon will still be blessing humanity, relieving suffering, saving life and going on triumphantly in the prevention of disease until in the Divine plan of the ages, death itself shall be no more, and every true physician, every faithful minister and conscientious teacher, every earnest unselfish worker for the welfare of mankind, all the good and great and noble of the whole earth and the self-sacrificing heroes and martyrs of all the ages shall enter that life where activity, learning and progress shall be untiring and unlimited, and where happiness, honor and glory shall be eternal.

ARTERIOSCLEROSIS NOT A DISEASE OF OLD AGE ALONE *

D. LICHTY, M.D.

President Winnebago County Medical Society.

ROCKFORD, ILL.

Probably no word or compound of words in medical language has come into so general and vulgarly abusive use, as has this one of "arteriosclerosis"; it seems as though it has been so easily born into the vocabulary of medical words and so freely used that its real meaning has been lost in the easy lingual trill of its orthoepy; the layman has appropriated its anglicised substitute of "hardening of the arteries," and is rolling it along with the glibness of the name of a new breakfast food, on familiar grounds with the doctor who uses the latinized hyphenation.

It is easily recalled by us who have spent a life-time in the study of medicine that the earlier conception of this malady was pretty generally regarded as a chronological or calendar disease; to have said of a subject that he or she had arteriosclerosis was to imply that only a stage of senescence or a period of longevity had been attained without reference or knowledge of its etiology; that the calcium plagues of advanced arteriosclerosis were only the mile-stones in the journey of life; Prof.

* Read by invitation before the Boone County Medical Society, Nov. 14, 1912.

Eli Metchnikoff and Dean Osler easily fall into the common trench of the common stream and ally this disease with the metamorphoses of age; we are, however, to regard it as among the gravest diseases of our strenuous educational, industrial and social life, with a side-chain reaching out to every vital organ, the brain, the kidneys, the heart, bringing a train of interminable sequelae.

Its etiology must necessarily revert to tissue metamorphosis of occupation, habit and environment; to air, food and fluid metabolism; how much these are dominated by the correlation between the cerebrospinal axis and the functional ganglion will open a labyrinth of psychiatry, which we dare not enter for an evening's paper; but, fundamentally this correlation must be reckoned with in any and every principle of vital dynamism directing nutritive distribution and tissue growth and waste; it is not adequate to base ultimate conclusions on the evidence of experimental comparative physiology in a disease so humanly intricate as arteriosclerosis; there is an essence, an aura of life in man above the animal, entangling him with most of his etiologic pathogeny that cannot be ignored.

Original experimental laboratory research is not possible to the general practitioner and should not be anticipated; the general practitioner, however, who has resided in a district or a community for a time, has inscribed on the index-rerum of his memory such an array of clinical and pathologic material of the dietary habits and ethics of his neighbor, that if rightly tabulated and accentuated, will have much practical value, if not excel the experimental physiology and pathology of the scientist's laboratory; he has seen the artisan, the farmer and the merchant go about his vocation, and later he has seen him staggering home with the unsteady step of ataxia; he has been called when his speech was thick and his face livid and drawn, and words were lost to him in the grip of amnesia and aphasia; he has been called in to prescribe for symptomatic cephalalgia and nephritis, where he at once knew that his friend and patient was the unfortunate and unwarned subject of a long-standing hypertension, probably an advanced arteriosclerosis, and that to which his attention has just been called is only the sequel of conditions pre-existing a long time, due in part to his strenuous vocational life and over-indulgence in diet and drink; and finally he has been summoned to the coroner's inquest of alleged obscure and sudden death, that he knew long before was impending.

Study and observation of arteriosclerosis for the general practitioner must rest on the fundamentals of etiology and pathology; in this he can go back as far as the Pythagorean theory of coction and crisis, or to the theory of the four humors and the four elements and the "irritability" of Glisson and Haller,¹ or he can secure the latest monographs from the experimental laboratories of Europe and America and familiarize himself with the very latest in biochemistry, chemical pathology, modern organic dynamics and histology, as well as all the alluring considerations of present bacteriology. None of these basic principles old or new, can be ignored; we are in the atrium of all these things, where the dynamism

of living matter and organic and inorganic substances are struggling among each other for supremacy in this new arena, demanding the ever-present but hidden secrets of life.

Students of clinics and students of pathology must be students as well of biology, ecology and microhistology; they must also have a knowledge of the chemistry of the fluids within, and exuding from the body, as well as a comprehension at least of the dynamics of living matter in health as well as in disease.

Present-day exactions of the physician are many and important; no avenue can be left unexplored.

In the later unveiling and rehabilitation of the potency of the pituitary body, the thyroids, the parathyroids and the adrenals, we are viewing phenomena that revert to Addison's disease, that illusive and elusive chromatic disease of earlier medical thought and study, and we are wondering whether the diminutive pituitary is again going to dominate in its Turk's saddle to direct to malformed destiny, cretinism, giantism and acromegaly; or whether its infundibulum in some erratic moment is going to close our existence; or whether if these ductless glands possess the property, *hormone*, given them by Prof. E. H. Starling, of University College, London, of influencing the great sympathetic nervous system and preserving and controlling the tonic contractions of the veins and arteries, have we not here in these ductless storage-cells, the chromaffin system, with a wireless "connecting link," an autocontrol, as well as an autotoxin, a vital agent, neither bacterial nor chemic, but dynamic, influencing blood-pressure?²

When we follow the conceptions of Edward A. Shafer, Professor of Physiology in the University of Edinburgh, and President of the British Association for the Advancement of Science, as expressed in his presidential address last June in Dundee, wherein he predicts the possibility of life in the simple moisture of formless cosmic material, or when we realize what Jacques Loeb, Gideon H. Wells, MacCallum and Barnes (deceased), are suggesting and have suggested in vital processes, are we not appalled at our earlier superficial histologic and chemical knowledge?

Glisson, Haller and Schwalm shot a ray athwart the track of progress that set other men to thinking, and forty rays shine now, where only one shone before.

Arteritis and endarteritis may be, like any other inflammation, either acute or chronic; acute inflammation of the walls of the arteries is grossly attributed, first, to some mural or intramural traumatism; secondly, to inflammation in some closely associated organ or tissue, or to the transmission of some septic matter directly through the bloodstream, through the lymph-channels or through the arteries' own vasovascularum from an affected area; irritating toxins may be introduced through the food, drink and stomach channels in the regular way, or they may reach the blood-current through the briefer and more direct route of the respiratory tract and the CO₂ and oxygen exchange.

Whatever induces hyperemia anywhere causes hypertrophy in the connective tissue. Huchard began his lecture in the last Congress of

Physiological Therapeutics in Rome in 1907, by saying that "all arterial cardiac pathogeneses begin with intoxication, continue through intoxication and end in intoxication," not stating whether the toxin be chemic or bacteric.

The factors oftenest alluded to in text-books that produce the morbid changes in the artery walls are usually, first, syphilis, then alcohol and the agencies that are supposed to produce rheumatism and gout; and crowding to the front in later and later-studied scientific monographs and text-books, is *tobacco*. With these, would, of course, be vocational exposure, strain at manual and mental labor and sexual excesses. That arteriosclerosis had hereditary contiguity and continuity is common observation; that persons pursue their routine of daily life depressed by hypotension to alarming melancholy or exalted by hypertension to lofty aspirations and wondrous achievement we daily see. They are unfortunately unconscious of the impelling toxemia that is driving them through this toxin and hypertension to do these great, sometimes erratic things, their friends cannot understand, while embolism and hemorrhage are plugging trunk arteries leading to the brain and important viscera, causing obscure and distressing symptoms or sudden death. The startling perversions of ethics in public life, the numerous and sudden deaths at seemingly dramatic periods of public men in apparent possession of vigorous health, are all too frequent, and point to a dereliction of the patient or the faulty diagnosis of the physician. With our continual boasting of increased longevity we must recognize that the mortality after so-called middle life is growing worse, and the deaths from diseases of the circulatory system increasing at an appalling rate.

From the monthly reports of the State Board of Health of Iowa, for August and September, there are *three* deaths from disease of the circulatory system, not including nephritis and other sequences, to *one* death from diseases of the respiratory system, admitting asthma, croup and diphtheria as of the latter; and Iowa is the fairest representation of uniform distribution of urban and rural life of any states where vital statistics are kept. Chicago's mortality statistics do not deviate far from this.

There has been an increase of over one hundred per cent. in thirty years in the death-rate from diseases of the heart, blood-vessels and kidneys, including apoplexy or cerebral hemorrhage. Three hundred and fifty thousand Americans die annually from these diseases,³ as against the shibboleth of the antituberculosis orator of two-hundred-thousand from that cause, and little has been said about the mortality and impairment from circulatory diseases and their sequelae; 60 per cent. of these should be prevented by early and accurate diagnosis and emphatic warning. *To err is human; to diagnose is Divine.*

That more men than women are subject to influences that produce arteriosclerosis is apparent; competitive conflicts of life, grosser exposure, excesses of every kind, neglect and residual toxins, all contribute to cause this disease and cripple the efficiency of the modern man or woman. Direct infections cannot be denied. Blood-count may vary greatly on

account of the large number of causes which produce arteriosclerosis; there are no microscopic blood-changes which in themselves can be said to be definitely associated with arteriosclerosis.

As arteriosclerosis follows many of the acute and infectious diseases from scarlatina to malaria and rheumatism, so it may follow any of the infectious diseases at any age, and can thus easily be placed outside the rôle of senile diseases, because childhood and adolescence are its acuter victims as surely as the middle aged are its chronic ones; puberty is recognized as an especially trying time for those with previously damaged hearts.¹² Every child should have the benefit of a close examination of its circulatory apparatus; the systemic and pulmonic circuits should be complete; the relative size and position of the heart should be charted; defects in prenatal position and development may thus be discovered and closures and openings of the fetal apertures, and the completeness of the new pulmonary short-circuit be noted. Pulse rate and volume is as important in the child, well, as at the clinic or autopsy; cardiac manifestations of disease in children are long apparent before there are arthritic or muscular ones, and the so-called "growing pains," and "rheumatisms," are the diagnoses of the busy neighbor or the meddling aunt, that the indifferent or politic doctor may agree with, to the lasting reproach of his profession and the detriment of the child.

There is a cardiac cachexia marked by extreme tissue change, as thickened nose and lips, clubbed fingers and shortened dorsum, with also defective heart and weakened artery walls. A small heart predisposes to tuberculosis and a defective one to mental deficiencies, circulatory diseases and renal sequelae. The usual casual recommendation that the child will "outgrow" these conditions is both the bane of youth and the opprobrium of the physician.

In the endogeny of the mammalian heart there is no greater complexity known, than this of the heart and the arrangement of its vessels; their intricate and intimate association with vital organs and accessories places it foremost in functional and pathologic study through both adolescence and senescence.⁴ Study of arteriosclerosis is in the subject and not in the autopsy or the calendar. When heredity projects poor tube material into progeny through syphilis, alcohol or tobacco, any child may have arteritis or endarteritis in any degree; they have the same etiology and pathology as pericarditis and endocarditis and lead to the same sequelae as in mature adults.

There have been a great many diseases with exaggerated names reported under various titles, like "arteritis-nodosa," "idiopathic arterial hypertrophy," "ossification" and "calcification," whose descriptions conform so well to that of a definite arteriosclerosis, acute or chronic, that they may well be taken into the general classification of arteriosclerosis. Anabolism as well as catabolism is claimed by Cohnheim to be going on at all ages in the bones; so connective tissue hypertrophy as well as atrophy, softening and necrosis, is also going on at all ages in the connective tissue skeleton of the arteries, which is *their* skeletal frame work. There are tissue characteristics running through families whose germ-

plasm stigmata will recur with startling DeVriessian regularity to baffle both diagnosis and prognosis. Physiologic, not to say pathologic senility begins all too early; our blood-vessels are wearing out before their time. The mortality after middle age is growing worse and the vitality of the people in all probability is deteriorating.³

The alcohol and drug — tobacco and cocain — habits are constantly adding to the list and the crippled and the death roll; what part these drugs play in crippling the efficiency of our present youth and blighting the germ-plasm for future generations no student-actuary or statistician can even approximately estimate; until we have research men free from the taint of either or both, no truthful results can be expected on the subject; moral courage is seemingly lacking to take this study up as it merits. Idiocy and insanity are increasing at an alarming rate in consequence of these pernicious habits.

Whatever disease, trauma or toxin induces hypertrophy anywhere, also causes hypertrophy in the connective tissue of the media; elastic tissue is also prone to an early calcification; thus it is not uncommon to see the elastic laminae of small arteries calcified in an apparently selective manner; calcification may involve any sort of a cell, provided it is degenerated sufficiently, especially connective tissue cells.

Every formative event in an organism is a phenomenon of matter in motion under law;¹¹ this will apply to pathologic as well as to physiologic processes through perversion instead of regular formation. We know that the germ possesses something more than merely the fundamental capacities for metabolism and growth; it is subject to sadly distorting forms and painful function.

There are no apparent limits to the possibilities of the study of the blood, for it represents a little of every organ, and a good deal that is characteristic of itself. It is a living plasma from its corpuscle to the lubricating secretion of its endangial wall. Sclerotic lesions may be in any artery, often in the seral capillaries, more especially in the aorta; bacterial infection is not necessary to an inflammatory reaction; an immense number of what we consider sterile substances both fluid and solid, soluble and insoluble, organic and inorganic can incite a toxic reaction which will equal the invasion of any microorganism; all the toxic proteids of meat, sterile olive oil, egg albumin, even physiologic salt solution introduced into the body may cause inflammation;⁵ passive filtration, or active osmosis may pass chemical toxins as well as pathologic microorganisms through seemingly impervious and contiguous membranes that can excite irritation; even tissue that has been destroyed, necrosed, may act as an inflammatory irritant; the débris of hemolysis may irritate the intima to active inflammation.

As a blood-pressure proposition, pregnancy and the secretions or substance of the placenta must receive recognition as its importance merits; pregnancy in health is accompanied by a rise of blood-pressure of 10 to 15 mm., with but little minimal pressure; in albuminous urine, however, the subject of blood-pressure becomes of paramount importance.

especially to the practitioner who embraces obstetrics in his routine work. Nothing can be more appalling than to be confronted by a thrombus, a hemorrhage or an eclampsia. Eternal vigilance is the price of peace and safety in this service; blood-pressure is as important as urinary analysis, as a red light to safety in the long road of two hundred and eighty days of anxious gestation. Splanchnic ischemia from an atheroma or sclerosis from the blood-pressure of the usually plethoric visceral vessels of pregnancy, and especially during labor, should not be ignored; for it too is a cause of sudden death; sighing sudden pallor and the facies of physical exhaustion are syndromes of momentous import.

In paracentesis abdominis the sudden withdrawal of large amounts of fluid may release the supporting pressure of the vessels whose resiliency is lost through arteriosclerosis, and may induce an alarming syncope, sometimes a fatal one; blood-pressure has been known to fall 32 mm. in paracentesis abdominis.

Living organs and tissues produce some electrical energy; a positive current has been demonstrated by a very delicate galvanometer from an uninjured healthy nerve cell, artery wall or other tissue area to an injured cell tissue or area, the electrolyte being the blood; its neutrality, alkalinity or acidity, being the controlling factors in this electrolysis; thus, a very active muscle, wearied by work or injured, or a wearied or worried brain-cell, is accompanied by the production of an acid electrolyte, viz., carbonic acid, possibly lactic, phosphatic or sarcodic acid, either of which will excite electrolysis; in most fevers the alkalinity of the blood is reduced: the corpuscles are richer in diffusible alkali than the plasma or serum; these acids, besides stimulating electrolysis, can also produce a precipitation of salts irritating in themselves and leaving deposits along the trail of the injuries. According to J. Loeb,⁶ metabolic activity is favored by certain degrees of alkalinity; acid conditions increase the viscosity of the blood making it harder for its propulsion through the arteries; thus trauma, thus irrigation, thus acid blood are a trilogy to produce blood-pressure and arteriosclerosis.

Klotz finds that the calcium is by no means always deposited in the patches of injury or atheroma, but exists also as rows of fine granules between the muscle fibers of the artery walls; here it causes only a slight rigidity of the artery; when the deposition is very slow the capillaries of the vaso-vasorum and the lymphatics can remove the calcium from the diseased area before deposition and irretrievable entanglement.⁵ Whether the calcium is deposited or not, the area of diseased media leaves a weakened portion of the wall, and this area becomes the seat of sacculation and aneurysm, may be atheroma, rupture, paralysis and death.

Admiration for Virchow, the great German pathologist, has not died out after half a century, nor will it die out as long as cell pathology continues; his theory was that arteriosclerosis is due to a new formative stimulus; he thus early had the perspicacity of Loeb, Shaffer, Rand and Wells. What that stimulus is, none of them states; but when we recognize blood as a living plasma capable of its own creation and inhibition whatever its hormone we can understand that by its own "specific action"

—Virchow's phrase, it can place its plasma wherever weakness or trauma may demand it; thus Thoma holds that arteriosclerosis is a compensatory thickening called forth by the vessel's own demands to strengthen injured or thinned artery walls; these studies were made during the injuries of athletics and competitive contests of adolescents. Jores presents similar views, though regarding the increase blood-pressure against the lengthened arteries as a cause of thickening, independent of the lessened diameter and the thinned walls. These observations are made without regard to any toxic or inflammatory invasion of the media, ignoring the nearer intima, the real seat of thickening.

Further, Koster and his pupils, authoritative students, relate thickening altogether to invasion from outside the arteries, and that the thickening takes place in the tubes, and hence narrowing the lumen increases blood-pressure and the strain on the heart. Acid conditions are increased in muscle strain in athletes and laborers as well as in disease and traumatisms; in turn, these acids will precipitate the soluble calcium to an insoluble calcium carbonate in the blood-stream, whose crystals irritate the intima, penetrate to the lattice frame-work of the connective tissue of the media and here set up the first process-irritation, the beginning of inflammation and resulting hypertrophy, incipient arteriosclerosis, while the calcium crystal remains in the connective tissue meshes; here it easily becomes the avid nucleus around which will gather succeeding crystals until a plaque enmeshed in hypertrophied connective tissue makes the gross, nodular and tortuous, palpable lesion of arteriosclerosis-nodosa apparent.

Martin H. Fisher, in his "Nephritis," 1912, page 2, holds that "All the changes that characterize nephritis are due to a common cause—the abnormal production or accumulation of acid in the cells of the kidneys." "The action of this acid on the colloidal structures is due to morphologic conditions and diseases of the kidneys, is his argument. Thus, this primitive chemical process becomes the genesis of arteriosclerosis; thus the etiology is, with the student of chemical pathology and vital dynamics, who toys with ions, anions, molecules and atoms and the inter-cellular nerve and muscle electrolytes, rather than with the bacteriologist. Excess of proteids, as is well recognized, also increases acidity and viscosity; venous blood has a higher viscosity than arterial blood, owing to the larger quantity of CO_2 in it, produced by aeration carried along in its stream and osmosed through the adventitia and the arteries' vaso-vasori; the media and probably the intima have filaments or net-work of vaso-vasori penetrating their substance as well; very good histologists hold so. Also, invasion may be through the pabulum of the lymphatic lacuna and canaliculi penetrating these several layers even to the intima. Infiltration follows all these paths either for repair or nutrition: either or all tend to produce thickening; if necrosis has already taken place, calcification is the rule; if only inflammation, then thickening only results. Ophül's argument is that anatomically the artery walls are a unit and that arteriosclerosis is a chronic inflammatory process which

attacks all the coats without specifying the etiologic substance at all. Here the chemical and bacteriologic pathologists find fields of conflict.

We should think of the arteries and vessels of the circulatory system as we do of the heart, the liver or the kidneys as a definite part of the body liable to be the seat of inflammation from the same causes as those which produce similar changes or diseases in the other parts of the body.

Symptoms complex relate first to the heart, secondly to the brain and lastly to the kidneys. To the general practitioner, objective symptoms are of first and most consequence; he must be able to distinguish between the blush of the maiden and the plethora of the gormand and of the nephritic or pregnant matron; both are hyperemias, both indicate increased blood-pressure; but one is the consciousness of a pure emotion and the other is the flush of a toxic hyperemia; he must recognize the hyperpnea of healthy exercise and the polypnea and orthopnea of heart hypertrophy and dilatation, the result of a hypertension of a central or circulating toxemia; he must recognize in the puffy eyelids, livid face, unlaced shoes and unbuttoned girdle, maybe aphasic speech, the objectives of an inter-pressure as surely as he will later with the sphygmomanometer or the test-tube; these are some of the perspectives of the astute pioneer physician long before the so-called "specialist" issues his imperious edict with the portentous thrill of "arteriosclerosis." Subjectively, the patient will complain of heavy headaches, not the acute lancinating and fugitive ones of exhaustion and neuritis; and he will have dizziness and hebetude, insomnia and night cramps of the extremities; he will tell of anesthetics of the extremities, formications and pricklings, and he may relate the incidents of threatened "strokes," and he may have had them; he will relate the frequency of rising at night to urinate; he may not consult a physician until an occlusion has produced an amnesia, a startling gangrene, or he comes limping to him with a serious hemiplegia or grave ataxia. Toxic angina, neurotic or sclerotic, is not uncommon, caused by tobacco, alcohol or coffee. "There's a reason."

The relation of high blood-pressure and arteriosclerosis has been much discussed. Which is primary? Cerebral excitation and infection must precede acceleration and blood-pressure, while arteriosclerosis is a result in easy etiologic and pathologic sequence. Are they produced by the same cause and at the same time? At any rate they are closely associated, and with sometimes tenderness and thickening of the radial, temporal and other palpable arteries, hardening is readily detected; then there is the hypertrophy of the left ventricle with accentuation of the second sound, the snapping of the mitrals and semi-lunars in easily recognized causal and mechanical succession that trained auscultation knows, distant wig-wag signals as it were, of an approaching and dangerous foe. By this compensatory hypertrophy and fortification the heart is able to drive the blood through the narrowed and stiffened arteries and maintain for a time normal circulation and secretion; in the end the heart fails or disease develops in some territory—symptoms relative to that part, tissue or organ; the source and course of the disease depends on the capacity of the tissues or organs for adjustment to function and com-

pensation to that specific organ or tissue involved; on the ability of the subject to live a life of rest and ease, and direction of his diet and drink, depends his longevity.

Hypotension and hypertension are related phenomena that have crowded medical literature past pages into volumes; Hirschfelder,⁷ in his classic work on "Diseases of the Heart and Aorta," employs seventy-two references or citations at the close of the chapter on arteriosclerosis, and seventy on blood-pressure; of course, there must be cross-references. In the chapter, Diseases of the Circulatory System, are five general captions, with forty-three subdivisions, not including diseases of the blood. The high blood-pressure, far from being in itself an evil thing, is decidedly advantageous, if not necessary; only through blood-supply sufficient to satisfy their physiologic demands can organs functionate; this holds for the kidney, probably more than for any other organ, unless it be the dominant brain; because in the kidney is the great filter apparatus of the blood; the purest blood of the body is that that has passed through the kidney; through the increased blood-pressure only, can a sclerotic kidney maintain the normal secretion from such kidney. In weakened or already diseased heart or blood-vessels this does not prevail, and many toxemias are inherent, and subtly prevail; remote pediatric trauma to the encephalon or cord, should be thoroughly inquired into.

The symptoms that can be produced by the anomalies and irregularities alone of the size and shape of afferent branches of the various segments of the arch of the aorta and its anatomically related structures are of themselves astounding. The fact that the ascending portion of the aorta is enclosed within the pericardium with the heart, and moves with its movements synchronously with systole and diastole, makes the rhythmic and dynamic impact of the blood column against the inner concavity of the lumen of the aorta harmless, and preserves the immature and constantly replicating lamina of the intima from destructive dissection and pathologic sequences, such as sacculation, atheroma, bulging or aneurysms; still here in the ascending portion of the aorta is the seat of the greatest and grossest pathologic exhibitions; here, next to the cerebral and ocular capillaries, atheromas and plaques form earlier than in any other portion of the circulatory apparatus; the valveless mouths of the coronary arteries and their interminable inosculating branches easily allow a congestion that results in atheroma, rupture and sudden death. The constant forward movement of the blood and the ever widening lumen of the aggregate of the dividing arteries are factors to both lessen impact and recoil and consequent traumatic dilatation, or real physiologic not pathologic hypertrophy. A distal or proximate traumatic or chemical phlegmon may occlude an artery, but anastomosing branches can supply a limited defect, and a slightly and temporarily impaired function could obscure diagnosis, unless it be on some important crest of a convolution or in the familiar valley of the cerebral ranges. How much interoseculation the coronary arterioles possess is a subject of inquiry: whether, much or little, rupture near their base can and does easily produce a fatal cardiac ischemia.

Homogeneous living blood is a living plasma amenable to its own inhibition whose direction is ever forward and never recessive; the transmission of bioenergy from corpuscle and plasma to intima and reverse is a recognized but inexplicable process ever tending to retain function and make repair;⁹ softening or sclerosis is not necessary and was never intended; repair through hypertrophy is Nature's conservation. That the unremitting activity of the heart's musculature is not within the higher volitional control, and without the subject's knowledge should beget an early recognition and search for competence, error and disease.

The child's and adolescent's hearts have been neglected. One of the manifest causes of increasing heart and blood-vessel disease has its beginning in the marked and hurried changes of relative sizes of the heart and vessels during these periods.

Relatively the heart of the young is large and heavy;⁴ in the newly born it is 0.89 per cent. of the body weight; in the adult it is 0.52 per cent.; its blood-containing cavity is small, 23 c.c. at birth, as compared with 100 c.c. at the seventh, and 140 c.c. at the fifteenth year; thus at the fifteenth year the heart contains six and one-half times as much blood as at birth and one and a half more than at seven years; the heart muscle at birth is massive and equally thick on the right and left sides, owing to disuse of the right side during the fetal period; the valves are small, elastic and vibrate quickly; the muscles grow firmer and the heart is heavier, but its circumference remains the same; the large arteries, namely, the abdominal, carotid and subclavian begin to lose their disproportionately large size, diameter, and from the seventh to the fifteenth years of growth, the blood-vessels are lengthened from 20 to 35 cm., just when care, and not violence should be observed; then new tissue and muscle adjustments are being made to greater volume of capacity in the areas supplied by these vessels, and the vessels are worked to their capacity.⁴ The soft heart muscle, mere nucleated masses of protoplasm, held together by the trabeculae of their own stellar cell tentacles, should be carefully guarded from this period on; the heart muscle of the young is easily exhausted and as easily attenuated or hypertrophied.⁹ The kidneys have similar tissues, besides their wondrous filter scheme; here are the beginnings of pathologic, circulatory and secretory lesions, that, with modern technic and instruments of precision, has enabled us to remove the autogeny and etiology of arteriosclerosis from senescence and place it rightly among the diseases of youth.

Trauma, as the result of the many unguarded excesses of adolescence, in play, in labor and excessive athletics, go unobserved and unheeded in the circulatory developments of youth that readily permit and grow into an hypertrophy or dilatation, or perhaps an endo-, myo- or pericarditis; to say a youth with a crippled heart will "outgrow it" is a confession of medical infirmity. As the endo- and pericardial membranes are histologically the same as the synovial linings of joints, they may be deemed susceptible to the same etiologic influences as are the joints; and hence rheumatic and gout irritants as readily excite inflammation in the

endangeii of the blood-vessels as they do in the synoviae of the joints. Fatigue and exhaustion produce toxins too little recognized; they produce an acid, slightly acid condition of the blood, sufficient to cause precipitation of the soluble calcium; it produces an excess of detritus that overworks the kidney; the glomeruli of the kidneys are broken in their integrity and albuminuria is found in nearly all fatigue tests: whether the toxins of these metabolisms accumulate in the muscles and produce rheumatism, whether they lodge in the intima and produce arteriosclerosis, or whether they irritate the cortical capillaries is not yet positively known. Alienists know that in the criminal and insane there is always marked circulatory disturbance; is the lesion to be in the cerebral, the renal, or in the seral capillaries?

The relation between the size of the heart and the circumference of the arteries is gradually changed during the growth of the body, and there is consequent variation of blood-pressure; during this period of puberty the heart increases very fast in volume, for the arteries increase much in length, with the increase of length of the body;⁴ but their diameter is relatively little increased so that much more work is required of the heart, and easy dilatation and hypertrophy follows, with arteriosclerosis an easy sequence. In this way we will be able to recognize arteriosclerosis as one of the grave acute as well as chronic diseases prevalent in all classes and all ages of people. It is not enough that we study its autoinfection, but we must consider as many extraneous causative factors as we know of, and remove these; all the economic conditions of labor and commerce we cannot control; the stress of present existence is on us, and if we can be impressed with the fact that more deaths occur from heart- blood-vessel and kidney disease annually whose pathology is arteriosclerosis, than from the Great White Plague so-called, we can appreciate the importance of our topic and seriously study its prophylaxis.

Blood-pressure, hypotension and hypertension are signals of irritating or toxic invasions, as will be appreciated; the causes that bring this about are not always simple ones: they may be from direct or reflex cerebral stimulation; domestic or business worry; political excitement or over-study; they may be from acquired or functional apnea, lack of air, and blood aeration, air hunger, or they may be from that lowest function of animism, the stomach—food, ingestion, digestion and “intermediary metabolism.”¹⁰

Next to connective tissue hypertrophy from too early and too often repeated assault and distention of the vessels in the laborer, the college and athletic competitiveness of adolescence, is the irritation and inflammation produced by the introduction of foreign toxins, or substances that may become toxic, passing through the nutritive channels and become toxic either in the glands before or during elimination and carried either as residual chemic or putrescent toxins into the bloodstream.

Dr. A. D. Hirschfelder, Associate in Medicine at Johns Hopkins University, under the “Etiology of Arteriosclerosis in Man,” enumerates

causes in this order: age, hard work, alcohol, syphilis, vocational exposure, lead, phosphorus, and the more infectious diseases, especially typhoid fever.⁸ He quotes and endorses Isaac Adler's experiments, wherein he says they establish beyond a doubt the deleterious action of *tobacco* on the arteries. Boveri confirms these reports. Bovaird, of Columbia University, in his recent treatise, "Internal Medicine," places tobacco next to alcohol. Statistics are the mystics of argument; the vicissitudes of life and their successes are the aggregate of energy, industry and age; these include hard work, mental or manual; this is the lot of such a large majority, that inclusion must embrace all; there is but small specificity in this; also alcohol is in almost universal use and this is inclusive: syphilis in some form is as prevalent; so, finding arteriosclerosis in a subject, which can take the blame? Syphilis cannot escape, because of its positive findings of spirocheta; the impact of strenuous life is on all; the bane of alcohol on ethics and health is all too prevalent, and none know it better than physicians. But, there is a toxic bane as universally prevalent as all other habits and occupation combined; it is the use of tobacco; this use seems almost universal; to isolate it as a causative factor would be impossible, but to utilize it, *is fair*. We know that a number of poisons are hemolytic; that they destroy the red corpuscles; the body may form its own hemolysin. The early practices of blood-transfusion from animal to human or human to its fellows were disastrous, and many lives were sacrificed before the micrology of hemolysis was recognized; reptile poison, as venins, are exceedingly hemolytic, and a number of plant poisons are strongly hemolytic; the blood does not furnish an amboceptor against phytotoxins, and thus destroys its own corpuscles. The working principles of Ehrlich's bacterial theory of immunity does not apply against the alkaloidal poisons, plant poisons—as morphin, nicotin, etc. The human body does not develop an immunity against these in the sense that it does against bacterial toxins; the blood-serum does not manufacture or acquire the substances capable of neutralizing these poisons; there is no amboceptor between toxic alkaloids and tissue, neither is there an affinity.⁵ No enzyme or hormone directs them, neither is there an opsonin to indicate their presence.

A certain kind of habituation or resistance, but no immunization is obtained against alkaloidal poisons, like morphin, nicotin and their congeners; the blood-serum does not acquire any substance capable of neutralizing these poisons; there may develop an enzyme or tryptic that can digest, neutralize or destroy their toxin, but it is not now known. The resistance against chemical poisons is a very different subject from bacterial infection; there is no elaborate process of defense against the chemically simple poisons such as seems to be called into action by bacterial infection; hence an immunity or resistance similar to that after scarlet fever, small-pox, etc., does not exist for strychnin, morphin and nicotin or any of the phytotoxins or vegetable poisons.⁵

The earliest observation of arteriosclerosis brought about by toxic action of organic compounds, and one which establishes beyond doubt the *deleterious action of tobacco on the arteries*, is that of Isaac Adler, dem-

onstrating sclerosis in the smaller peripheral arteries of rabbits as a result of feeding them with infusions of tobacco. Boveri confirmed these results by giving infusion of tobacco by stomach-tube, and obtained athromatous plaques or thickening at the base of the aorta in ten out of sixteen rabbits, while Baylac obtained sclerosis in each of eight rabbits into which tobacco infusion was injected either intravenously or subcutaneously. Jebrowsky and later W. E. Lee have produced it in rabbits made to inhale tobacco smoke. From Baylac's experiments, it would appear that in general the liability to occurrence bears some relation to the channel by which tobacco enters the body. This may explain the very marked action of tobacco, inhaled and entering the heart directly from the pulmonary circulation in smokers, as compared with the somewhat milder effects of chewing tobacco, under which condition the nicotin passed through and is perhaps somewhat attenuated in the liver before entering the systemic circulation, and has still to pass through the venae cavae, right heart and pulmonary circulation before reaching the coronary circulation. In smoking, however, the nicotin enters through the lungs and strikes its first blow at the coronary arteries and base of the aorta, where the elastic fibers are under the greatest tension, and hence most liable to degeneration. It is, therefore, easy to understand why smoking of heavy cigars should be one of the most potent factors in the etiology of arteriosclerosis and coronary sclerosis.⁸

Devoto's assistants, Josue, Forlanini and others, show that tobacco causes a hypertension resulting in vessel changes closely related to arteriosclerosis.

Gouget, of Paris, as quoted in the *New York Medical Journal*, 1906, conducted experiments on rabbits by introducing into their stomachs 10 to 75 c.c. infusion of tobacco; the stomachs of the rabbits bore the infusion well; the histologic lesions consisted of serious degenerations of the walls of the circulatory system, arteriosclerosis.

Emil Hess, of Berlin, in an investigation of twenty-five cases of the influence of tobacco on the circulation, found it is stimulating; it increases blood-pressure; he further declares that tobacco should be forbidden in all cases where we wish to spare the heart.

Dr. Frankel-Hochwart, of Berlin, Germany, in an article in *Deutsche Medizinische Wochenschrift*, of Dec. 14, 1911, on Nervous Diseases, says, "That nicotin poisoning affords a predisposition to *arteritis*." He discusses further the action of nicotin on heart and respiration and concludes his article by emphasizing the fact learned from his experience that the localization of the toxic action of nicotin is very much like that of syphilis. The influences of syphilis and alcohol in producing arteriosclerosis are so numerous and graphic that when *nicotin* is placed in the same class as causative factors by so eminent an observer and diagnostician it is not difficult to accept his conclusions. These enumerations could be continued ad infinitum—and the user will say *ad nauseam*. Yet every writer on the treatment of arteriosclerosis recommends the exclusion of tobacco as the first thing; the more recent writers being much more emphatic in this than the older ones; if it is not a factor in causing arteriosclerosis, why its early denial in treatment?

University and college physical directors have long ago shown by their anthropologic measurements and ergographic tests and critical observations that tobacco users do not equal the non-users in either athletics or studies; even their physical development is retarded, as shown by comparison of their growth in weight and stature.⁹

Are not doctors derelict in not presenting the truths of tobacco use to the youth of their patrons and of the community? It becomes humiliating to a learned profession when educational, industrial and commercial bodies observe this before doctors.

The trend of thought and truth on this subject is in the scientific literature, reports of experimental laboratories, not in the Lucy Gaston literature, nor of the tobacco trust's advertisements. There is a progressivism in ethics and study pertaining to the injurious use of tobacco among scientists and physicians, as surely as there is in politics; it is better not to be a "stand patter."

The report of the Commission appointed by the Academy of Medicine in Paris, on antityphoid vaccination, in their summary, report that those most benefited by the antityphoid vaccination are the female nurses in military and civil hospitals who never used tobacco, and young persons of both sexes who came from salubrious regions in the country and had not acquired the habit of tobacco using.

The Medical Department of the United States Army and Navy has under advisement the classification of its soldiers and sailors as to their use of tobacco and the influence of the antityphoid vaccination on users and non-users and its beneficence in the two classes.

Of medicines, the less taken the better; adrenalin should not be used; it will increase blood-pressure and has caused atheroma; digitalis is the *ignus fatuus* that has lured more victims to systolic lethæon, through the misguided ardor of the tyro, than arteriosclerosis and heart lesions combined; when digitalis is true, it is too potent to be left in layman's hands, and when inert it only misleads the doctor and jeopardizes the patient. Nitrites and strophanthus are more reliable. Sodium iodid is preferred to potassium iodid. Alkalis to keep the blood neutral or alkali; the same to reduce excessive gastric and renal acidity; the same care should be had in administering alkalis as any other drug or chemical.

With the fore-warning that either tactile or sphygmomanometric knowledge can give, it is predicted that early phlebotomy, with after-rest and careful drink and diet, arteriosclerosis can be arrested, near normal blood-pressure secured and life prolonged.

1. Renouard's History of Medicine, by Comegys, 1859.
2. Rand, Herbert W.: Organization, Science, Dec. 20 and 27, 1912.
3. Fisher, Irving: National Vitality, 1909.
4. Hall, Stanley: Adolescence, 1904.
5. Wells, H. Gideon: U. of C. Chemical Pathology, 1907.
6. Loeb, Jacques: The Dynamics of Living Matter, Lecture V, 1906.
7. Fisher, Martin H.: Nephritis, Columbia College Alumnae, Med. Dept., Prize Essay, 1912.
8. Hirshfelder's Diseases of the Heart and Aorta, 1910.
9. Lichty, D.: Care and Treatment of the Adolescent Heart, Medical Examiner and Practitioner, New York, 1906.
10. Dakin, H. D.: Oxidations and Reductions in the Animal Body, June, 1912.
11. Opie, Eugene L.: Inflammation, Harvey Lecture, February, 1910.
12. Poynton, F. J.: A Contribution to the Study of Overstrain in the Young, Pediatrics, November, 1899.

REPORT OF FOUR YEARS' WORK ON CANCER *

THOMAS A. HOGAN, A.M., M.D.
CHICAGO

I wish to make a preliminary report of some work done by me during the past four years, in a small way, in the field of experimental non-surgical treatment of inoperable and postoperative recurrent cases of carcinoma.

Perhaps one of the most interesting studies in all medicine is that of cancer and its research. Back to the days where the history of medicine becomes indistinct and merges with its tradition, men have sought for the non-operative treatment of cancer with the same hopeful trust that the alchemist devoted to the discovery of the means of transmuting the baser into the higher metals, and with about the same measure of success. The work was done in an unscientific, desultory and unsystematized manner; it lacked the present knowledge of chemistry, biology, pathology and kindred branches, as well as modern systematic laboratory methods. The work of recent years, both in research laboratories and by individuals in this country and Europe, has been characterized by system and painstaking care.

The laboratory work has been more along the line of study of its etiology, cytology and transmissibility to animals of different species, or to different animals of the same species; the work done outside of laboratories has consisted in experimental therapy on animals and humans.

Notwithstanding this work, cancer remains to-day, as in the early days, material for the surgeon, although we may well believe that we are on the eve of the discovery of its specific cure.

From time to time the medical world hears premature reports from various sources of the discovery of the specific cure of this malignant disease, which do not bear the tests of time. Cancer pastes, electricity, light, Roentgen rays, radium, radio-active waters and bodies, ferments, bacterial infection, serums, vaccine and many chemical agents have been hailed as the possible means of specific cure. Some of these have unquestionably proved of value in selected and limited numbers of cases, but, of course, the majority have proved worthless.

Before discussing results of cancer investigation it is necessary to recall a few general facts regarding cancer and the cancer cell.

A cancer is an atypical neoplastic growth of a preexisting, heterotopic matrix of epithelial cells, persistently embryonic in type, prenatal or postnatal in origin. We may speculate as to whether this matrix is the result of misplaced cells in early embryonal life or the result of postnatal mischance; whether it is an example of arrested development or an anomalous reversion to a primitive stage in the evolution of the normal epithelial cell; but we must admit that it is composed of cells which are the persistence of an early embryonic type, less specialized and of a

* Read before the Chicago Medical Society, Jan. 15, 1913.

lesser degree of differentiation than the normal epithelial cell. They exhibit throughout their whole life cycle an atavistic tendency to perpetuate their early embryonic or prenatal characteristics. Indeed, they seem to represent transitional type between the protozoon and the normal cell. They never become a perfect adult epithelial cell, retaining even to the time of their degeneration this imperfection of development and, as in our social body, the defectives live a parasitic existence at the expense of the normal units.

The genesis of malignancy in cancer is its mitosis or cell division. Metastasis is an accidental consequence. Arrested mitosis in a carcinoma would mean a non-malignant tumor degenerating spontaneously.

I believe that the initial carcinomatous stage in a heterotopic epithelial focus is not, as has been maintained, cell migration, but cell division. This mitosis is almost immediately followed by cell migration and vascular proliferation. This gives us the "local infection" or malignant growth in the initial carcinomatous focus, or in those secondary metastatic foci which have become infected through the blood or lymphatic channels, and are distal to and isolated from the focus of primary infection.

As the carcinoma increases in size, the vascularization of the periphery keeps pace with the extension of the tumor, resulting in copious stimulation and proliferation of the peripheral cells. The axial cells not getting this nutriment, owing to the degeneration of the vessels axially, cease further proliferation and undergo degeneration.

The immediate and determining condition which causes the dormant cancer nest to spring into activity, is still problematic, although it has been the subject of much study and many theories have been adduced to explain it. I am led to believe that this augmented vegetative capacity is not entirely due to a change in the condition of the tissues which the cells inhabit, or "lowered physiologic resistance," but in a great measure to an extrinsic dynamic force resident in the nutriment of the cell, the blood. There is a physical and chemical change in the blood early in the carcinomatous stage and probably precarcinomatous, which is produced by an unbalanced metabolism. This change affects its alkalinity, specific gravity, viscosity and salt content. The altered biochemical blood conditions, acting upon the heterotopic embryonic epithelial cells, probably act as a stimulus and cause the progressive vegetative activity.

To my mind, any efforts at specific cure for carcinoma must be directed toward the restoration of the normal biochemical structure of the blood, in order to overcome the cell stimulation or fertilization, and toward a direct attack upon the mitotic function of the newly-formed carcinoma cell.

The carcinoma cell is not as resistant to adverse external conditions as are the normal cells; in fact, from the start it is characterized, as Thiersch has said, by degeneration.

The embryonic epithelial cell has a selective susceptibility for certain toxic substances which the adult or normal epithelial cell does

not possess, or possesses to a lesser degree. In other words, certain substances are lethal to the new carcinomatous cell in quantities which do not produce death in the normal cell.

I believe that Roentgen rays and radio-activity would prove effective against cancer, since the cancer cell is of such relatively low resistance, if they could be brought in contact with the most distal cells, but this is impossible, excepting in epithelioma, as the normal cells would begin to react and degenerate if in contact with these rays for too prolonged a time. Serum and vaccine therapy might be effective if the general organism did not react, as it does, to these agencies, before sufficient effect is produced upon the malignant cells.

To accomplish this selective fatality, the substances must be brought into contact with the new carcinomatous cells through the blood-supply, which is abnormally abundant in the periphery of the tumor—the malignant zone. This is the area of most rapid proliferation, the preponderance of growth and multiplication of the new cancer cells being in this region.

Chemotherapy, or chemicals supplied to the tumor cells through the blood, seems to me the only hope of the solution of the problem of cancer destruction, and of the innumerable agents used in this way the salts of the heavy metals, preferably those of the lead and iron groups, seem most indicated. It has long been known that a selective antagonism exists between the salts of the heavy metals and the cancer cell, and much work has been done in the way of attempting to decrease the toxicity of these salts to the normal cells without decreasing their toxicity to the malignant cell, in the same way that Ehrlich modified arsenic in salvarsan, but without success. Whether these salts act through their toxicity upon the cell body solely, or through an inhibitory electro-chemical action upon the nuclei in their process of division, or by a combination of these two conditions, I am unable to say.

I believe that we shall eventually learn that the number of agents that may be used to destroy cancer growth, chemotherapeutically, not alone in the mouse, but also in the human, is many, and that we need not go prospecting in the mountains of the moon for rare and unheard-of metals, either; that it is not so much the metal employed, as using the ones selected in the proper manner; that is, with proper technic.

Wassermann has reported some wonderful results in mouse cancer with a combination of selenium and eosin, but owing to its profound toxicity, he has not used it in the human. Solutions of tellurite have been used in mouse cancer with good reports.

I am personally convinced that the only requisite for cancer destruction in the human is to use, with proper technic, a salt of the heavy metals, which is toxic to cell life and cumulative in its action.

At this point I would state that there is a class of substances, of which eosin is a type, which are passive, beyond giving to the cancer cell a hypersensitiveness or special avidity for the toxic metal salts, in the same manner as a mordant acts in the art of dyeing. These bodies are derivatives of coal tar, having the chemical formula $C_{20}H_{12}O_5$, with

either twelve atoms of hydrogen, or these twelve atoms replaced wholly or in part by other elements or radicals, e. g., fluorescein, $C_{20}H_{12}O_5$ and eosin $C_{20}H_8Br_4O_5$. They have the physical property of fluorescence. Their action is probably physical rather than chemical. When injected alone in therapeutic doses these substances exert no appreciable effect upon the tumor, but when given in conjunction with the salts of the heavy metals, a much less quantity of the latter is required to produce reaction than when these sensitizing substances are not used. I think they sensitize the chromatin threads of the nuclei in process of division, causing them to exercise a selective attraction for the metals; in any event, with their use reaction is produced in the tumor by the salts of the heavy metals which cannot be produced by much larger quantities of these salts when used alone. These bodies, in other words, increase the differential coefficient of receptivity to the toxicity of the metal salt between the normal and malignant cells.

I have used in several non-operative and postoperative recurrent cases in the human a combination of crystalline organic salts of copper and zinc, to which I have added one of the sensitizing substances above mentioned. While using this I make the blood a trifle hyperalkaline, and to reinforce the blood in its efforts to withstand the rapid absorption of the tumor detritus (protein end-products), I use phosphorus.

The soluble organic salts of the heavy metals are bound very loosely in their chemical combination, and when injected into the blood in solution, they are acted upon by the carbonate and sulphate of the blood, which precipitate them in a finely divided state, in which form they persist wholly or are in part changed to obscure albuminous combinations.

The mixture is given intravenously with normal salt solution in small, slightly and gradually increasing doses until the patient complains of a persistent metallic taste and colicky intestinal pains; here the less-resistant cancer cell has just passed beyond its point of tolerance to the toxic metal, when mitosis stops and degeneration begins. Small, infrequent doses then insure retrogression and absorption of the tumor.

The fixation methods at our command, hardening, sectioning, staining and mounting, involving so many manipulations, has a tendency to distort or at least change the tumor cells from fresh material, but by teasing out small numbers of cancer cells from perfectly fresh material in process of degeneration and treating them while under the glass with a couple of drops of hydrogen sulphid, we may see clearly the copper salts deposited either in or about the nuclei. Furthermore, if we make an aqueous mixture of tumor detritus in a test tube and treat with hydrogen sulphid, we obtain a positive copper reaction.

Some European investigators report results on mouse, rat and dog cancer with the use of silver and cobalt, which are inconceivable to me. They state that they begin to get results within a minute or two after injection, and within twenty-four hours they have the tumor pretty well destroyed. Fortunately, I have never gotten such results, as the human economy is not able to take care of such immense amounts of degenerated

cell débris, and the patient would die at once instead of the prolonged death that would naturally come to him if left alone.

The treatment extends over a period of from two to three weeks before any appreciable change can be seen in the tumor, and its degeneration and absorption takes from two to six weeks, depending on its size. During this time, if the tumor is of any considerable size, the patient is in a typhoid or septic state, the urine being laden with products of protein absorption—albumoses, peptones and amido-acids.

The absorption of the tumor is not complete at this, as the hyperplastic connective-tissue reticulum persists for many months thereafter—in fact, I doubt if it is ever completely absorbed.

I do not wish to imply that every case of carcinoma is amenable to this treatment, for such is not the case.

Before a specific may be accepted as such it should respond to the following tests: It should have been tried in a series of many cases, the diagnosis of which has been unquestionable. It should have given the identical results in each case, and a considerable number of years should have intervened without signs of recurrence.

I have not tried this treatment in very many cases, as work of this character done outside of an institution of considerable size lacks the opportunity of sufficient material, and my work was naturally confined to inoperable and postoperative recurrent cases only. I was personally satisfied of the correctness of the diagnoses, which had been made by competent men, and in some cases confirmed by the microscope. The results were as follows: One patient died before cell saturation had time to occur. Two patients died after cell degeneration had begun, from absorption of cell débris, the patients being too far debilitated by the disease to withstand the toxemic effects of the absorption of large tumors. One has been free from all symptoms of recurrence for a period of two years, and three for periods of less than two and more than one year.

My observation of the treatment has suggested the following:

1. That whatever hope we have of non-surgical cure of cancer, excepting epithelioma, lies in the salts of the heavy metals.

2. That owing to the toxic nature of the degenerating tumor mass, which has, in all likelihood, considerable to do with the morbidity and mortality in cancer patients at the present time, we probably shall never find a specific for every case of cancer. In other words, only those cases of cancer will respond to specific treatment which have not progressed too far to permit of saturation of the cancer cells by the medium employed; those in which there is not too great loss of body resistance to withstand the toxemia of tumor absorption or in which there is an accessibility for surgical aid in the removal of the degenerating tumor débris.

3. That a combination of organic crystalline salts of copper and zinc with one of the sensitizing bodies above mentioned will, when used with proper technic, arrest mitosis and permit degeneration in certain cases of carcinoma; that is, that in certain cases it is a specific cure.

4. That in all probability this combination will prove to be not the only one that will produce cancer destruction, nor perhaps the best one.

Now, gentlemen, we have all witnessed, at one time or other, cases where excessive zeal and enthusiasm on the part of an observer has so colored the report of his observations that work of otherwise real merit became worthless from a scientific standpoint. For this reason I would like to make a further report at some future time of cases which shall have been diagnosed and whose progress shall have been observed by members of this society. Accordingly, I would say that if any member of the society has an ambulatory inoperable or postoperative metastatic recurrent case upon which he wishes to observe the effects of this treatment, I should be very glad to work in conjunction with him.

3957 Sheridan Road.

WHAT SHALL WE DO WITH MEMBERS WHO CUT PRICES?

MEDICAL ETHICS, OR THE DUTY OF PHYSICIANS TO EACH OTHER *

O. C. CHURCH, M.D.
WOBBURN, ILL.

Every physician should realize that his is a noble profession and that his success depends on several factors, viz., his ability, his tact, his personality and his opportunity. But a physician may have all of the above and yet be a failure. If he is surrounded by physicians of unscrupulous characters, unethical physicians who would say and do things to advance their own selfish interests and reflect on the ability of a brother physician, failure instead of success would be his lot even though he had all the essentials listed above. The medical profession is not what it should and could be. Whose fault is it? You all know that it is our own fault. If we expect the laity to say or do anything to advance our interests, we will never make any advancement. *That* is in our power to do if we will, through our medical societies and by personal interviews with offenders.

It is our fault that we make calls — both day and night — especially at night, when no human being should be away from his fireside. Too many physicians are afraid that if they don't go and make an almost impossible call, that some other physician will, so they conclude that they might as well go as the other fellow, who probably lives only half as far away. That's selfishness. That's a miserly disposition. When a physician can do so, he ought to suggest calling the nearest physician to assist, especially in fractures or confinements where an anesthetic is, or ought to be given, and thus favor the brother physician, and at the same time divide the responsibility.

If physicians were organized as they should be, they could have everything their way from a medical standpoint. I don't mean that they

* Read at the meeting of the Bond County Medical Society, Jan. 9, 1913.

should take undue advantage of their clients, not that. What I mean is that physicians should receive a fair and just compensation for their services. That every physician should strictly adhere to schedule prices agreed on by the society. That every case where a physician is known to cut prices, the case and the doctor's name should be presented and thoroughly discussed by the medical society of the county in which he resides. Also where a physician in a neighboring county violates the rules of another county, that physician should be reported either personally or in writing to the president and secretary of the county in which he, the offender, resides; then leave it to his society to determine the penalty. I have thought of writing a few lines to the offender himself, but hesitated, because I felt as though he might betray me to patrons in my own territory, and thus stir up enmity and ill will among those who should rightfully patronize me. Of course, a conscientious and ethical physician would not condescend to such tactics. The schedule prices in Bond County are not too high; in fact, they are very low when compared with prices in some other counties. Especially are they low when compared with the prices of other commodities which our patrons have for sale, and which we must buy at these advanced prices or do without. Then if our prices are low why make them lower by cutting and going from seven to ten miles on a confinement case for \$10, when you would charge the same for crossing the street in a case of that kind. It has been reported and can be proven that doctors have made trips of seven miles for \$3.50 instead of charging \$1.50 or more, depending on the roads, weather and ability of the patient to pay.

I have a brother-in-law who lives four miles from Belleville, and in each of their three cases of confinement it has cost them from \$25 to \$50 (no forceps, either). An ordinary trip that distance costs them \$5. I know of cases in Bond and Montgomery counties where doctors have gone ten miles on confinement cases for \$10, and the same distance (ordinary sickness) for \$3 and \$3.50. I expect to charge schedule prices whether other doctors do it or not. I am going to treat my professional brothers right and at the same time my patrons too. Don't you have to pay market or schedule prices for everything you buy? Then are we unjust when we expect the same from others? I have no objections to other physicians being called to see my neighbors if they charge schedule prices. No, sir; they can come every day, and I will welcome them to my office. But it is a dirty, mean, sneaking trick to make such calls of a dollar or more less than schedule price, in order to appeal to them — yes, ask them in that way for their practice. Notwithstanding the fact that he had to go from seven to ten miles, when they have a recent graduate, a competent physician across the street.

Physicians ought to realize that when they undercharge they are doing themselves as well as other physicians an injustice. If people want a certain physician they will have him, even if they know it will cost them more.

Not long ago a man called at my office and inquired what I would charge for trips to his home in case he had sickness. I told him \$2 (he

lives about $1\frac{1}{8}$ miles from my office). He said, "Well, I used to pay \$1 a trip and sometimes \$1.50, but never \$2." I told him I had charged others that price for going that distance and I could not consider charging him less. He said, "Now, that is your price and you would be willing to sacrifice my practice rather than go for less?" I said, "Yes, sir." I told him that if he had sickness and had more confidence in some other doctor than he had in me, he would send and get him regardless of the cost. He said, "Yes, I believe I would." I said, "You would do that even if I went for nothing." I then told him that if he had confidence in me, and thought I could do the work, he would not stand back for fifty cents more than he had ever paid before. He saw the point and I expect to do his practice.

During small-pox in Woburn, I was asked what I would charge to visit several homes for the purpose of ascertaining whether or not small-pox existed in those homes. I said, "Two dollars for each home visited." I informed the proper authority that \$1 was the regular fee in Woburn, but I could not expose myself and family to a contagious disease at the ordinary rate. I was told that if I would go for the ordinary rate I could go. I said, "No, it will cost \$2 per house." I was told they would see about it and let me know later. The next day I was ordered to visit those homes and at my price, which was very reasonable.

A director of a certain school asked what I would charge to vaccinate all the children at the school house. I told him fifty cents a piece. He thought it was too much and that twenty-five cents was enough. He said if I would do it for twenty-five cents a piece to go ahead. I told him it would cost each one fifty cents, but where there were three or more to be vaccinated in a family that I would make a difference to that family. I lost the job, but will never miss the money.

A few months ago I was called to a certain family four miles distant, and charged them \$3. I knew, however, that they tried to get me before, but could not, so they called another doctor seven miles distant. I asked what he charged them, he said \$3. Now that doctor might as well have had \$4.50 as \$3.

Another way that doctors cut prices is by charging from twenty-five to fifty cents for a diagnosis and medicine included. A physician's knowledge of what the patient needs is worth fifty cents to the patient, and the medicine is worth from twenty-five to fifty cents additional, making seventy-five cents or \$1 in every case for office practice.

Dr. A. was located at ———— for about twenty-five years; he seldom charged over fifty cents for medicine at the office regardless of how much the patient carried away. He seldom charged over \$10 for confinements, and made several after-trips regardless of the distance to the patient. These after-trips were included in his fee of \$10. He charged \$1 a trip in town (day), and the same at night. You say he was foolish and made a mistake, and that is quite true. In all of these instances he could and should have received more. Well, he became dissatisfied and left the town without a doctor. In less than sixty days another doctor went in there and made the following charges: Confinements, \$15, instead of \$10, and no after-visits; visits in town,

\$1.50, instead of \$1; night, \$2; medicine at office, \$1, invariably. These prices are true, no guess work, as I stayed with this doctor awhile, and nothing under \$1 was ever put down. I say, gentlemen, it is our fault, and this fault is due to jealousy, envy, thoughtlessness and selfishness in our brother physicians.

A letter from Dr. ——— of E. St. Louis states that their custom is to charge as much as the patient can pay, and then to take as much as he will pay. Let us not only talk about doing something, but actually do it.

If our fee bill will stand revising, let us revise it. If it is all right the way it is, let us all live up to it and quit cutting prices, thereby showing our worthiness to be listed among ethical physicians.

THE DOCTOR'S PSALM OF LIFE

What the Heart of the Old Practitioner said to the Young Doctor

Tell me not, in mournful numbers,
 Practice of medicine is a dream;
 That the doctor always slumbers,
 And things are easy as they seem.

Practice is real! Practice is earnest!
 Charity, really, is not its goal;
 For the doctor often finds it
 Hard to earn his winter's coal.

With hours long, no duty shirking,
 And with heart both stout and brave,
 Night and day he keeps on working
 To hold some mortal from the grave.

In the world's broad field of battle
 He has learned what 'tis to trust;
 Found most people worse than cattle;
 Never paying till they must.

Trust no patient, howe'er pleasant,
 Sing! O sing this little song;
 PAY! PAY in the living Present,
 Divy up as we go long.

Great collectors all remind us
 We can make our lives more bright.
 And, departing, leave behind us
 Gold for which our heirs will fight.

Let us then be up and doing,
 This one thing to recollect;
 The good old dollar still pursuing,
 LEARN TO LABOR AND COLLECT.

With apologies to H. W. Longfellow.

Bacillus Poeticus. A. G. BOSLER.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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APRIL, 1913

THE CASE OF FRIEDMANN

A great deal of misunderstanding prevails among the laity as to the attitude of the profession toward Friedmann's alleged cure for consumption, and the ethics of the profession are being roundly abused by the newspapers who seem to delight in slandering medical men. Under the circumstances it becomes important for our members to know exactly what the attitude of the profession is. The best plan, as we know, to get a new treatment before the world is that which was adopted by Professor Ehrlich in connection with salvarsan. Instead of making a public display as Friedmann has done, Professor Ehrlich submitted his remedy to a number of prominent clinicians, who were requested to keep absolute silence regarding the value of the remedy until its worth was positively demonstrated. When this was proven to the satisfaction of all concerned the remedy was put on the market without any great public demonstration, and the value of the preparation remains to this time about the same as when it was put on the market.

It is not believed that any of the glory or emolument of the discovery was lost to Professor Ehrlich by this course, and it is altogether probable that had Dr. Friedmann pursued a similar course his reward would have been the same, if his remedy is valuable.

He might well have taken also an example from Thomas Edison, who delayed more than a year in placing the kinetophone before the public.

Edison wished to be absolutely certain of the perfection of his discovery before he gave it to the world. Of course, no lives of innocent and confiding people were in the balance, as in the case in giving out an alleged cure for disease.

Apparently, Friedmann is acting a very small part in this alleged discovery and will reap the just reward of selfish promotion.

We are sure that the medical profession only hope that the Friedmann remedy may be of value in the treatment of consumption, but Dr. Friedmann's course is certainly open to great criticism. Should it prove to be of less value than Friedmann claims, the profession would be roundly abused had it taken up "the cure" without investigating and lent its aid in deceiving the public.

Friedmann's methods of advertisement are being widely imitated. The very latest is by Dr. Peter P. Duket, formerly of Toledo, Ohio, and recently of Chicago, who, under the auspices of Wm. Lorimer and certain members of the faculty of the Bennett Medical College, has announced a cure which he is administering at Grace Hospital, Chicago.

DR. DAVID LIVINGSTONE

March 19 was the centennial of the birth of David Livingstone, the Scotchman, one of the best examples of manhood ever produced by any country, and one of the most creditable representatives of the medical profession since the beginning of time. The anniversary of his birth was widely celebrated in all English-speaking countries, and in these busy selfish times it is well for the medical profession to remember the devotion to duty, self-sacrifice and courage of this great man. Throwing aside all thought of personal comfort he prepared himself for the great work of a missionary, and so well did he perform his duties that an entire continent which had, since the creation, remained a danger spot both physically and morally, was put in the way of redemption and development.

It is only now that the full meaning of Livingstone's work is being appreciated. The high character of the man should never be forgotten, and no better text-book on the ethics of the medical profession could be placed in the hands of the young graduate than a well-written, truthful life of Livingstone. His heart was buried in Africa by faithful converts, his body lies in Westminster Abbey, where it was placed, accompanied by the tears of Great Britain and America.

THE MADSTONE

In another column will be found an inquiry regarding the madstone from Dr. O. C. Church, a young practitioner of Greenville, Bond County. Dr. Church graduated two years ago. There may be other novices in the medical profession who are just learning to try their wings in medicine and fly from the popular superstitions and ideas which prevail among the laity, and for this reason we undertake to answer that a madstone is defined a good deal like a mascot. Webster says, *a madstone is a stone*

popularly supposed to counteract the effects of poison from the bite of an animal. Thus you have it in a nut-shell, except that the madstone may not be a stone, or it may be any kind of a hard substance of a stony character. Several things it always possesses, and that is a marvelous history of how it has been handed down from generation to generation; of how it always sticks to the person bitten by a mad animal, and never to any other person; of how it has never failed to cure the afflicted, and finally of how much cash value it has been to the owner who is kind enough to have it tried on every person simple enough to believe in its wonder working properties.

It is remarkable how tenaciously the laity continue their belief in these hoary fakes. It is not only the ignorant and superstitious who believe in them, on the contrary many who should know better, swallow the bait. It will probably be 11:45 p. m. of the last day about one hour after the final cataclysm that some unfortunate refugee will appear with a charm guaranteed to put out the fire. Answering the doctor's other question we might say that the madstone is always porous and dry and sticks to a moist surface a good deal like a new clay pipe stem sticks to the lips of the smoker.

BROUGHT TO BOOK IN IOWA

Daniel Orr Schiller of Rockford, to whose illegal practice we called attention in the February issue of the JOURNAL, was arrested at Cedar Rapids, Iowa, March 18, convicted of practicing medicine without a license and presumably fined for this offense. The following account from the Dubuque *Telegraph-Herald* gives further information regarding this man, who undoubtedly left the state of Illinois with a large bundle of money. He did not prosper very well, it seems, in Iowa. Illinois is the easy state, and had not the JOURNAL taken a hand in exposing this man, he would still have been swindling the people of the Sucker State.

Along this line is the case of one S. C. Brown, traveling under the name of "Dr." C. W. Davis, who was arrested at Galesburg, March 19, and found to have over \$500 in his possession obtained by the sale of a medicine for the eye, said to contain charcoal and flour. How long will the people and profession of Illinois stand for this sort of highway robbery.

"Dr." Schiller came to Cedar Rapids and opened up an office. He advertised extensively and gave many testimonials, supposedly from well known persons in this vicinity. His patients flocked in from miles around, each with his or her particular ailment and the necessary ten dollar bill. Schiller did a thriving business until County Attorney Linville put a stop to the proceedings.

On the witness stand Schiller claimed he had taken a correspondence course from a school of "Newology" in Los Angeles and had been ordained as a minister and divine healer by a bishop from Peoria, Ill. The ordination took place in Rockford.

RESOLUTIONS OF THE COUNCIL OF THE CHICAGO MEDICAL SOCIETY

Resolved, That it shall be unethical for any member of the Chicago Medical Society to treat free, in any institution, any patient known to be able to pay.

Resolved, That the Committee on the Abuse of Medical Charities be authorized to get the cooperation of all hospitals and dispensaries in the installation of uniform system of records in all such institutions as shall be declared to be ethical.

Resolved, That the Chicago Medical Society urge on the county that appropriation be made for the pay of the medical attending staff of all its institutions.

Resolved, That a specific sum be set aside for the use of the Abuse of Medical Charities Committee, and that no bills be paid therefrom without the consent of the Trustees of the Chicago Medical Society.

—From the *Bulletin*, Chicago Medical Society, Feb. 15, 1913.

Resolved, That no patient shall be given any treatment, except in emergencies, in any institution, without a statement from the family physician or the physician who previously treated the case that such patient is unable to pay, or who shall decline to furnish an affidavit to the effect that he is not able to pay.

WHEREAS, Certain members of the Chicago Medical Society and the American Medical Association are so prominent and their surgical achievements are so remarkable that they cannot avoid unethical publicity, such as has been manifested in recent newspaper and magazine articles, while the other members are debarred by the recently adopted code of ethics from bringing their modest merits to public notice by paid advertising; be it

Resolved, That the Council of the Chicago Medical Society recommend, in the interest of fair play and consistency, that Section 4, Chapter 2 of the Code of Ethics of the American Medical Association, reading as follows: "Solicitation of patients by circulars or advertisements, or by personal relations, is unprofessional. It is equally unprofessional to procure patients by direct advertisements, or by furnishing or inspiring newspaper or magazine comments concerning cases in which the physician has been concerned. All other like self-laudations defy the traditions and lower the tone of any profession and so are intolerable," be so modified as to permit as far as possible, more general distribution among the profession of the opportunities for public notice; and be it

Resolved, That this preamble and resolution be published in the next issue of the *Bulletin* and be given for publication in the ILLINOIS MEDICAL JOURNAL and the *Journal A. M. A.*

From the *Bulletin*, Chicago Medical Society, March 22, 1913.

DEATH OF DR. J. A. EGAN

Dr. J. A. Egan, for sixteen years secretary of the Illinois State Board of Health, died at his residence in Springfield, Sunday, March 30, 1913; aged 53 years. Dr. Egan, at the time of the conference between Governor Dunne, the officers of the State Medical Society and the members of the State Board of Health, recently held in Springfield, was seen

to be in a state of extreme nervousness, and it was evident to a close observer that his vital forces were much shattered. From this time until the end came he gradually lost strength and died from uremia, having only been confined to his room one day. His death will probably lead to the reorganization of the health department of Illinois in the very near future.

An interesting family of five children who have been deprived of both parents within three years will receive the sympathy of the entire medical profession.

OSTEOPATHS AGAIN ACTIVE

The osteopathic "rubbercity" numbering about 250 adherents in the state have again had the presumption to place a bill for an act to regulate the alleged practice of that cult in the 48th general assembly. This was introduced by Mr. Thomas N. Gorman of Peoria and will be referred to the committee on judiciary when appointed. We believe the bill as printed is contradictory, misleading and void. However, this should not stop our friends from getting busy at once to prevent the consideration of this bill even by the committee. If the committee on judiciary should be appointed before the JOURNAL for this month goes to press we will insert the names, and ask all our readers to communicate with these gentlemen in opposition to this bill. Should the appointment of this committee be too late for us to print the same this month, the legislative committee will get busy by letter and otherwise to make a demonstration of the opposition of the medical profession on this subject.

For the present we refrain from referring to the particulars, but we can easily demonstrate that the bill is a vicious and dangerous one.

BIRTH AND DEATH BOOKKEEPING

Under this title the Association of Life Insurance Presidents recently issued an excellent pamphlet of some fourteen pages. The subject matter refers to the registration of births and deaths in a thoroughly practical manner from the standpoint of a layman and a good citizen. A diagram on page thirteen shows that Illinois ranks nearly the bottom in the whole union, and far behind its neighboring states.

On reading this pamphlet we wrote the following letter to the headquarters in New York City, and are glad to know from the answer which was soon received, that our suggestion to place a copy in the hands of the members of the 48th general assembly, met with favor and will be carried out. His letter shows that the whole country is commenting on the delinquency of Illinois in sanitary and health administration and legislation.

The address of the association is No. 1 Madison Avenue, New York City, and no doubt any member of the state society wishing a copy of this pamphlet will be supplied on application to Mr. Cox, the general counsel and manager.

SPRINGFIELD, ILL., March 21, 1913.

Association of Life Ins. Pres., No. 1, Madison Ave., New York City.

Gentlemen:—I beg to acknowledge receipt of your pamphlet entitled "Birth and Death Bookkeeping." This is a very valuable publication and because of the very backward condition in the State of Illinois in this important matter, I would suggest that a copy of this pamphlet be sent to every member of the Forty-Eighth General Assembly now convened in this city. If you do not have the names of the members I should be glad to supply you with them.

NEW YORK CITY, March 24, 1913.

To the Editor:—I have your letter of the 21st inst. and am pleased to know that you can commend our pamphlet on "Birth and Death Bookkeeping." It was in fact prepared very largely with the Illinois situation in mind, though we have used it so far mainly in other states, where registration laws have already been passed this year.

We expect to place this in the hands of your legislature, and thank you for the suggestion. It is encouraging to know that you believe it will be helpful.

Yours very truly,

ROBERT LYNN COX,

General Counsel and Manager.

SPECIAL TRAIN TO THE AMERICAN MEDICAL ASSOCIATION MEETING

The St. Paul Railway has arranged to run a special train for the exclusive accommodation of members of the Illinois Medical Society and their friends who will attend the national meeting to be held in Minneapolis next June.

The equipment will be composed of drawing room, standard sleeping cars, buffet library car and dining car. Every car in the train represents the highest standard of construction. The St. Paul sleeping car has that distinctive comfort feature, the "longer, higher and wider" berth. For one hundred miles the railroad and the Mississippi River run a collateral course.

The Illinois State Medical special train will leave Chicago, 6:35 p. m., June 16, and arrive Minneapolis 7:45 a. m., the next morning. The rate for a double lower berth, Chicago to Minneapolis is \$2; for a double upper berth, \$1.60.

For reservations on this train, write Geo. B. Haynes, G. P. A., Chicago, Ill. Dr. E. W. Weiss, Secretary, Illinois State Medical Society, Ottawa, Ill.

BILL AGAINST FEE SPLITTING

Honorable Medill McCormick of Chicago has introduced a bill to prevent fee splitting by physicians and surgeons. A similar bill known as the Woodward Bill has passed the House of Representatives in Missouri. The Missouri bill fixed a fine not to exceed \$500 for every offense, and the violation of the law is also punishable by revocation of license. The fact that both of these bills were introduced by laymen is quite significant. Who would say that they should not be passed?

ECCENTRIC AND AGED DRUGGIST DIES

Hiram G. Farrell, for fifty years or more a druggist in Peoria, Ill., and for that length of time one of the best known citizens, died at the home of his daughter, Mrs. Charles Siegfried, at Newport, Rhode Island, January 23.

The deceased was over 90 years of age. In his later years his mental faculties were somewhat eluded, although to the last he maintained a firm grip on his business affairs. One of his peculiarities was that he insisted that his agent in Peoria pay the rent and keep possession of the old drug store in the 100 block Main Street, that he operated so many years, and which formed the basis of his fortune. The building in which this store stands is just as Farrell left it years ago. The windows are so dirty that it is almost impossible to see through them. The old fashioned fixtures and the huge stove which furnished warmth for generations of patrons still stands as it did. The bottles and packages still stand on the shelves, but they are laden down with a thick coating of dust.

All efforts on the part of his family and his business agent to induce him to give up this unprofitable bit of property proved unavailing, and he insisted that it stand as he left it.

Farrell was born in Mt. Pleasant, Pa., about the year 1820. His father, Robert Farrell, was at one time a member of the Pennsylvania State Assembly and was a man of some consequence in his community. He came to Peoria with his wife and children some sixty years or more ago. He had four sons, all of whom became either physicians or druggists. Dr. John Farrell was the oldest, William G. was next, Hiram G. came next, and the late Clinton Farrell, also well known in Peoria for half a century, was the youngest. The Farrell drug store was opened some time in the fifties.

GOOD ROADS RESOLUTIONS

The Committee on Public Relations wishes to report a request asking for cooperation of the Medical Society and the County Medical Societies for the passing of a Bill for Good Roads that is now before the Legislature.

At the present time, the world over, the subject of good roads is a live and important topic. No member of the community, whether urban, suburban or rural, should have more interest in good roads and a keener desire for the betterment of our highways than the physician.

Good roads extend his practice, widen the sphere of usefulness and increase both the comfort and safety of his daily journeying. Good roads, too, increase the safety of his patients, for in many an emergency the speed with which a call can be answered will determine the question of life or death. Therefore, be it

Resolved, That the Chicago Medical Society extend to the people of the state, its hearty cooperation in their efforts to ameliorate, as soon as

possible, this one of the many hardships to life in the rural districts, and which works a special hardship to the life of practitioners who have a rural clientele. Be it further

Resolved, That the Chicago Medical Society indorse the platform of the Illinois Highway Association, adopted at Peoria, Ill., Sept. 27, 1912. That we do everything within our power to assist the members of the General Assembly to put on the statute books of Illinois a good roads law; and be it further

Resolved, That these resolutions be published in the *Bulletin* of the Chicago Medical Society and the ILLINOIS MEDICAL JOURNAL, and that a copy of these resolutions be sent to every member of the Legislature from Cook County.

Moved, seconded and carried that the resolutions be adopted.

Council of the Chicago Medical Society, March 11, 1913.

EXAMINATIONS FOR THE ATTENDING STAFF OF COOK COUNTY HOSPITAL

The Cook County Civil Service Commission will hold examinations for Attending and Associate Physicians for the various departments of the Cook County Hospital at 547 County Court House at 7 P. M., on the following dates:

To fill eighteen positions in the department of Medicine, April 3.

Four positions in Nervous and Mental Diseases, April 4.

Six positions in Contagious Diseases, April 5.

Six positions in Children's Diseases, April 7.

Eight positions in Tuberculosis, April 8.

Eighteen positions in Surgery, April 10.

Four positions in Skin and Venereal Diseases, April 11.

Four positions in Obstetrics, April 12.

Four positions in Gynecology, April 14.

Four positions in Ear, Nose and Throat Diseases, April 15.

Four positions in Eye Diseases, April 16.

Four positions in Orthopedics, April 17.

Four positions in Pathology, April 17.

Those desiring to take any of these examinations must make their applications on blank forms which will be sent by the Commission on request and file them with the Commission not later than 12 M. of the day next preceding the date for which the examination is called. The appointments are for six years.

The hospital treated last year over 34,000 patients. The patients will be grouped in the departments into services of about fifty beds each in permanent locations. One attending and one assistant physician are

assigned to a service. As soon as possible, promotional examinations will be held for a chief in each department, who will be responsible for the general organization and control of his department.

The attending physicians are required to attend at the hospital three days each week at least two hours each day, while the associate physicians must attend at least two hours each day five days every week. Both attend continuously with an allowance of three months' vacation each year.

The scope of the examination will be, special subject, 6; experience, 4. In the marking of experience the nature of the position makes academic and medical school education, service as an intern, in general practice or in practice of a specialty, post-graduate work, hospital and dispensary work, original research work, important contributions to medical literature and teaching advantageous to the applicant.

Correspondence

THE DOCTORS "NOT GUILTY"

To the Editor:—A little more than a year ago a 9-year-old boy died in the office of Drs. Hill and Housh, in East St. Louis, while being operated on for phymosis under chloroform anesthesia. The circumcision had been practically done, only two stitches being required to complete it, when the respiration suddenly ceased. The usual measures were immediately adopted for maintaining the respiration and the heart action, but these were unavailing and the boy was not revived. Some time after this the parents brought an action for damages in the sum of \$10,000 against the doctors, but the case was dismissed at the request of the plaintiff's attorney. Later a second case was brought into court and tried on its merits resulting in a verdict in favor of the defendants.

In the trial of this case it was shown that chloroform is recognized as the anesthetic of choice in children under ten years of age; that the statistics showing that ether is the safer anesthetic do not show that it is safer for the particular class of patients to which this patient belonged; that it does not take into account the deaths occurring later from the "ether pneumonia," nor those from "nephritis" caused by the ether; but only those dying immediately while under the anesthetic. These facts, being clearly established by competent witnesses, resulted in such instructions from the trial judge that acquittal was the only verdict which could be rendered that could stand.

While Drs. Hill and Housh are to be congratulated on the results of the trial it is still more a recognition of the well-known fact that deaths during any operation, no matter how simple it may appear, are unavoidable, and are part of the "risk" which the patient must assume.

C. W. LILLIE.

STATE SOCIETY MEMBERSHIP

MEDICAL SOCIETY OF THE STATE OF NEW YORK
January 14, 1913.

Dear Doctor:--I have read with great interest your letter in which you say that it is proposed to make New York No. 3, with Illinois No. 1 and Pennsylvania probably No. 2. Now I do not think that is a nice spirit to start the year 1913 with. I, however, beg to say that whenever you beat New York, New York will take its hat off, and in addition to that, if we can help you in any way to beat us, by increasing your membership we will do it, but just remember that Yours Truly and a few others can also get busy and by the time you are through with your increased membership ours will be so much larger than it is to-day that you will look like thirty cents.

With lots of affection and kindest regards, I am,
Sincerely yours,
Dr. E. W. Weis, Ottawa, Ill. WISNER R. TOWNSEND,
Secretary.

VACANCIES IN U. S. MARINE CORPS

HEADQUARTERS U. S. MARINE CORPS
WASHINGTON, March 15, 1913.

SIR:--I have the honor to inform you that the Navy Department has directed the convening of Boards of Officers on Monday, July 14, 1913, for the purpose of holding competitive examinations of young men between the ages of twenty-one and twenty-seven years, for the purpose of filling the vacancies in the grade of second lieutenant, U. S. Marine Corps. These examinations will be held in Washington, D. C., San Francisco, Cal., and in other cities if the number of applicants will justify the expense involved.

The Marine Corps consists of 345 officers and 9,921 enlisted men, and is a component part of the naval service of the United States. The officers of the Marine Corps are on the same basis for pay, allowances, retirement, etc., as officers of the infantry, U. S. Army.

The commissioned strength of the Marine Corps is divided as follows:

	LINE	STAFF
Major General Commandant.....	1	..
Colonels	8	3
Lieutenant-Colonels	7	5
Majors	20	8
Captains	94	13
First Lieutenants	96	..
Second Lieutenants	90	..

There are at present fourteen vacancies in the grade of second lieutenant.

The pay of a second lieutenant is \$1,700 per annum, with 10 per cent. additional for each five years' service. In addition there are certain allowances in the way of quarters, heat and light, or commutation thereof. The position, if secured, is for life, or good behavior, and officers com-

missioned as second lieutenants are in line for promotion to the higher grades as vacancies occur. Officers of the Marine Corps are required to serve at sea on vessels of the Navy, and on shore at naval stations in the United States or in its foreign possessions.

There is no appropriation available to advertise this opportunity to young men throughout the country, but it is suggested, should you consider it probable that among the readers of your paper there be young men likely to be interested in securing a commission, that you give such publicity as may be practicable to this matter. Full particular will be given upon application to the Major General Commandant, U. S. Marine Corps, Washington, D. C. Blanks will be furnished for formal application of those who desire to take this examination. Full information can also be secured at any Marine Corps Recruiting Office located in the cities given in the attached list.

Very respectfully, W. P. BIDDLE,
Major General Commandant.

THE NEW VITAL STATISTICS BILL

To the Editor:—It has just been announced that a new vital statistics bill, based on the model bill modified to meet the requirements in this state, has been introduced by Senator Cornwell, as Senate Bill 313. This bill is the product of the best thought of all the organizations of the state interested in child welfare. The Chicago Medical Society, the Legislative Committee of the Illinois State Medical Society and the Chicago Department of Health were actively represented on the committee which formulated it.

The provisions in this bill for securing reliable data on industrial diseases alone make it the best one that has ever been proposed to any legislature in the United States. If enacted it will place Illinois in the van of vital statistics legislation and will secure to the state data of the highest value both for the individual and for the public.

County societies would do well to endorse this bill and write to their representatives in its behalf without delay.

Sincerely,

CHARLES J. WHALEN, M.D.

ARTHUR M. CORWIN, M.D.

HENRY G. OHLS, M.D.

THE MADSTONE

GREENVILLE, ILL., March 15, 1913.

To the Editor:—Please print a brief history of the renowned madstone. State facts as to its merits in dog-bite. What makes or causes the madstone to stick on when applied to persons bitten by dogs?

Of course, I do not believe in madstones, but cannot answer the above question when put to me. Tell us all about the madstone in the April number—case in mind. Very much interested in this at this time.

Fraternally yours, O. C. CHURCH, M.D.

Special Articles

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION

THE PROPOSED CHANGE IN NAME

GEORGE H. SIMMONS, M.D., LL.D.

CHICAGO

Explanatory Note:—This Abstract of an Address before the Conference of State Secretaries is republished from the American Medical Association Bulletin of Nov. 15, 1912, on the request of the Judicial Council. The House of Delegates referred the report of the Committee to Formulate Amendments to the Constitution and By-Laws to Extend Membership, presented at the 1912 Session (*Journal*, June 15, 1912, p. 1899) to the Judicial Council with power to confer with constituent Associations. The council, after careful consideration, endorses the proposed change and takes this means of bringing the subject to the constituent associations as well as directing to it the attention of the members.

I have been asked to discuss the present conditions of membership in the American Medical Association and the proposed change, which has been under discussion recently. While this is not directly related to the object of this conference, the discussion of uniform regulation of state membership, it is so closely connected with it that I cannot refuse to take advantage of the opportunity of discussing the question before such a large representation of state secretaries.

To get a clear understanding of what the present term "members" of the American Medical Association means, it is necessary to go back a little in the history of the Association.

The American Medical Association always has been a delegated body; only "delegates" ever had a right to take part in its proceedings.

"Permanent members" was a term originally applied to those delegates who connected themselves permanently with the Association after they had served as delegates. "Permanent members," however, had no rights except those of attending the meetings and taking part in the scientific work. In 1883, *The Journal* was started and the following year, for the purpose of increasing the circulation of *The Journal*, there was created another class: "Members by Application." A member of any so-called affiliated society could become a "member by application" simply by making application for membership and paying the annual dues. The difference between "members by application" and "permanent members" was that the latter had been delegates, whereas the former became members simply by making application. Neither "permanent members" nor "members by application" had vote or voice in business meetings.

MEMBERSHIP IN THE A. M. A. TO-DAY ON THE SAME BASIS AS THE FORMER "MEMBERS BY APPLICATION"

Briefly, we have the following situation:

1. The voting membership of the organization is the combined membership of all the 2,000 (more or less) component county societies.

amounting approximately to 70,000 members. These elect the delegates to the House of Delegates of the state associations; they in turn elect the delegates who form the House of Delegates of the American Medical Association. Before 1901, the delegates to the American Medical Association were elected, or appointed, by the "affiliated" societies, which included local, district and state societies. Since 1901, that is, since the reorganization, the delegates to the national body are elected not by local, district and state societies, but by the state societies alone.

The Present Situation



Chart 1

2. The so-called "members of the American Medical Association" are the direct successors of the old "members by application." By their payment of dues and their subscriptions to *The Journal*, they were and are to-day the supporting or contributing group of the members of the organization.

3. The House of Delegates is composed of approximately 150 members, who are elected by the various state Houses of Delegates, which are in turn composed of delegates elected by the members of the component county societies. The House of Delegates of the American Medical

Association, therefore, is created by, and represents the combined membership of all the county societies of all the states; it is not elected by, nor does it represent, the present "members of the American Medical Association" as such; it never has.

The result is that we have two classes which could be called members. First, the actual, logical memberships of 70,000, usually designated as "the membership of the organization." Second, the 36,822 contributing or supporting members, who are designated as "members," although these

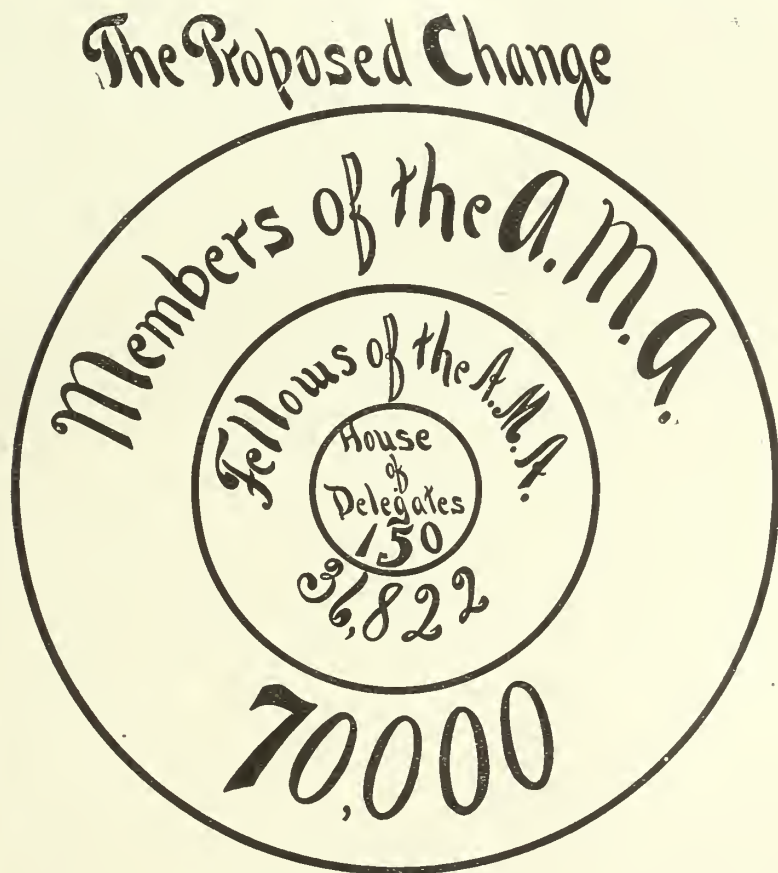


Chart 2

"members of the American Medical Association" have no more privileges than have all members of the organization, except the right to take part in section work. This present situation I have had shown on the accompanying chart (Chart 1). The membership of the American Medical Association, at present 36,822, is an inner circle of the membership of county societies, while the House of Delegates is a still smaller circle composed of those who have been elected to represent the members of the organization of the whole country.

Now the situation itself is perfectly logical and is in every way to be recommended. The trouble is that we have not named our groups accurately. Those whom we now call "members of the American Medical Association" are really those members of the organization who, in addition to supporting their county and state associations, also contribute to the support of the American Medical Association, while for the actual membership of 70,000 members we have no distinctive name.

The change that has been proposed is not a change in condition at all. It is simply a change in name. It is proposed to designate the 70,000 members included in the large outer circle (Chart 2) as "members of the American Medical Association," which they really are and always have been, while those included in the inner circle (that is, those members in good standing of their county and state societies, who also pay \$5 a year to support the work of the American Medical Association) are to be called "fellows of the American Medical Association" instead of "members." This will make no change in the membership standing or relations of any man. If this suggestion is adopted, all members in good standing in their state organizations will be designated as "members of the American Medical Association," while those members who contribute \$5 a year to support the work of the Association will be designated as "fellows of the American Medical Association." In other words, those who are now known as "members" of the American Medical Association will be known as "fellows" of the American Medical Association, while the term "members" will be applied to the entire, combined membership of the component county societies of the whole country.

This plan has several advantages. In the first place it will give us a name for the entire membership of the organization, which we have never had before. Before 1901 they were referred to as members of "affiliated" societies, and since then they have been called, for lack of a distinctive name, "members of the organization." Another advantage will be that it will make clear that the voting power lies with the 70,000 members and not with the 36,822 "fellows." When this plan was first proposed, some got the impression that the intention was to compel the 70,000 members of the county societies to become "supporting members" of the American Medical Association, as the term is now understood. This, of course, would be a ridiculous proposition. The proposed change contemplates leaving membership conditions exactly as they are; it contemplates changing the name, and not the relation.

One great disadvantage prior to the reorganization of the American Medical Association in 1901 was the fact that we had no name by which to designate the delegates. As soon as the name "House of Delegates" was adopted, then the function of the delegates became clear at once. The Association also has labored under the disadvantage, ever since its reorganization, that there has been no name by which to designate the actual voting membership, because the term "members" had been applied to the supporting body. The proposed change simply recognizes this fact, designating as "members" those who really are members, and designating the supporting members as "fellows."

I have already given some reasons for making the change, but there is another and more important; in fact, it is the paramount reason. Up to the present time, the members of the organization have not realized that they are, in reality, members of the American Medical Association. They regard the American Medical Association as something entirely apart from them, something in which they have no interest. These members of the organization are through their elected representatives responsible for what the American Medical Association is doing, or what it ought to do and is not doing, but they do not realize this, hence they are not interested. They do not appreciate that the House of Delegates of the American Medical Association, which they elect, is the body that is doing the work through the officers, trustees, councils, etc., which they, through their representatives in the House of Delegates of the American Medical Association, select. While only a change in name, I think the subject is of the utmost importance. I hope that all of you will look into it carefully, so as to understand exactly what is intended, and then will explain it to your members at the first opportunity.

THE SPUTUM ALBUMIN REACTION IN TUBERCULOSIS *

J. B. ROGERS, PH.C., M.D.

From the Laboratory of the Edward Sanatorium
NAPERVILLE, ILL.

Recently the sputum albumin reaction in tuberculosis has attracted much attention. Fullerton,¹ Works,² Scott,³ Brown and Ross,⁴ Fishburg and Felberbeaum,⁵ Fishburg,⁶ Raw,⁷ and others, having made reports. In an effort to determine the value of the reaction, at the suggestion of Dr. Theodore B. Sachs, Medical Director of the Edward Sanatorium, I have made a study of the sputum albumin reaction in 115 cases at the sanatorium. In some of the cases a single test was made, but in the majority of cases a series of tests were made during a period of several months.

Technic.—Several methods were tried. One giving fairly satisfactory results is as follows: The sputum is collected in a wide-mouth bottle with tight-fitting cork; to the sputum is added an equal amount of 3 per cent. solution of acetic acid—bottle stopped and thoroughly shaken and set aside for one-half hour, then filtered and to filtrate collected in a test-tube, add a few crystals of sodium chlorid, heat, then set aside and note whether or not there is a precipitate of albumin.

Results.—Of the total number of cases examined, 73 per cent. gave a positive albumin reaction. Of sixty-nine open cases (tubercle bacilli in

1. J. R. Fullerton, Glasgow Medical Journal, lxxviii, No. 1, 79.

2. B. O. Work, J. A. M. A., Oct. 26, 1912.

3. A. R. Scott, J. A. M. A., Feb. 8, 1913.

4. L. Brown and W. H. Ross, 7th Annual Meeting National Assn. for Study and Prevention of Tuberculosis.

5. Fishberg and Felberbeaum, Medical Record, Oct. 28, 1911.

6. Fishberg, Archives of Diagnosis, July, 1912.

7. Raw, British Medical Journal, Dec. 2, 1912.

sputum) sixty-two gave a positive albumin reaction; seven open cases, and showing distinct physical signs, gave negative albumin reactions; fifteen closed cases (sputum negative for bacilli), but showing physical signs, gave a positive albumin reaction; thirty-one closed cases, twelve of which showed physical signs, gave negative albumin reaction. It was noticed that in the active cases, the sputum showed a larger amount of albumin than in the inactive cases. It was also noticed that in some cases a positive albumin reaction became negative as the patient improved, or increased as the disease progressed. These results may justify the conclusion that the sputum albumin reaction, when taken in conjunction with other signs and symptoms of tuberculosis, is of some value in diagnosis and in determining the activity of the tuberculous process.

Preliminary Program

ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY AT PEORIA,
MAY 20, 21 AND 22, 1913.

THE FIRST DAY

1. *Status of Vital Statistics in Illinois and Our Obligations.* T. H. D. GRIFFITTS, State Board of Health, Springfield, Ill.

History of vital statistics measures in Illinois. Results obtained. Sanitary application of the information obtained. Should have statistics to show the actual rate of dying—an index to sanitary conditions and an efficiency check on measures directed toward the conservation of human life. Birth statistics to enable most comprehensive campaign against infant mortality. Present conditions; hopes for the future. Legislative enactment is not the only prerequisite. Our professional, legal and moral obligations.

2. *Report of a Case of Transplantation of Bone for Ununited Fracture of the Right Tibia with Remarks on Osteogenesis.* J. E. ALLABEN, Rockford, Ill.

Double fracture of right tibia, lower third and middle; simple fracture of right fibula at the middle. Three months later the fracture of tibia at lower third being ununited, it was wired. Came under writer's care seven months later still ununited. A piece of bone was transplanted from left tibia into the ununited portion of right tibia. Now twelve months since transplantation, new bone has filled the space ($\frac{3}{4}$ inch) between ends of fractured bone. Good functional result. Presentation of x-ray photographs showing fractures and different stages of new bone formation. Presentation of patient. Brief discussion of the new theory of Wm. Macewen, F.R.S., Glasgow, on growth of bone.

3. *Sporotrichosis in Man.* W. W. HAMBURGER, Chicago.
4. *Some of the Rarer Fractures About the Wrist Joint.* D. B. Phemister, Chicago.

Variation in location and type of fracture with age; folding fractures, epiphyseal separations; sprain fractures. Barton's and reversed Barton's fractures; fractures of the carpal bones.

5. *A Clinical Research on the Surgery of the Upper Abdomen.* A. D. BEVAN, Chicago.

The report of a group of cases in which a definite anatomical diagnosis was made from the clinical findings before operation, and a comparison with the conditions actually found at operation, showing some of the difficulties in the way of differential diagnosis between lesions of the bile tracts and liver and those of the stomach, duodenum and pancreas. A claim that this work may be made the highest class of research and a plea for the general adoption of this method.

6. *The Early Identification of Tuberculosis of the Lungs.* SUMNER MILLER, Peoria.

The successful treatment of tuberculosis of the lungs depends on its early application. The diagnosis at a stage earlier than moderately advanced or advanced tuberculosis is not made by a large number of physicians. Only the specially trained physician identifies the meager findings of incipient tuberculosis. Past experience demonstrates that we cannot expect early diagnoses from many physicians. The establishment of a clinical instead of an anatomic standard for incipient tuberculosis of the lungs would enable every physician to give all cases the advantage of early treatment: i. e., cough, malaise, temperature and loss of weight constitute a syndrome sufficient for the institution of appropriate treatment under the characterization "Incipient suspect."

7. *Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis with Cases.* E. A. GRAY, Chicago.

History. Action on diseased lung. Conditions for operation. Indications for operation. Technic. Collapse versus compression complications. Dangers. Effect of long continued compression and collapse. End results. Cases already reported. Author's cases.

8. *The Present Status of the Treatment of Tuberculosis.* J. W. PETTIT, Ottawa.

9. *Three Score Years and Ten.* C. B. JOHNSON, Champaign.

10. *Nephroptosis.* W. E. SCHROEDER, Chicago.

Relation to hydronephrosis. Experimental production of hydronephrosis. Pathologic changes in kidneys of dogs. Clinical course and diagnosis with special reference to the early diagnosis with the use of collargol and x-ray. Operative treatment.

11. *Oration in Medicine.* JOSEPH COLLINS, New York.

12. *X-Ray Manifestations of Gastro-Intestinal Motility.* C. A. ELLIOTT, Chicago.

13. *An Experimental Study with Intestinal Suture Materials.* G. T. COURTNEY, Chicago.

1. The amount of reaction with different suture materials—microscopic and gross. Specimens from dogs illustrated.

2. The relative strength of the line of suture, using various materials, as evidenced under pressure.

3. Clinical deductions as borne out by the foregoing work in some cases in the human subject.

14. *Heredity and Epilepsy—A Plea for the Colonization Treatment of the Epileptic.* D'ORSAY HECHT, Chicago.

15. *Motion Pictures Illustrating Various Nervous and Mental Diseases.* THEODORE H. WEISENBURG, Philadelphia, Pa.

SECOND DAY

1. *A Simple Method of Preparing Catgut.* E. M. SALA, Rock Island.
2. *Treatment of Hemorrhage in the New-Born.* MARK T. GOLDSTEIN, Chicago.

Case reports, both personal and of other authors. Etiology as it now stands. A history of the treatment up to date with a comparison of the different procedures in the treatment. The effect of the latter and the present-day treatment on the patient.

3. *The Results in Abbott's Method of Treatment in Scoliosis.* J. L. PORTER, Chicago.

The radical difference between Abbott's method and any other. The reason for the new departure as regards position of the patient. Conditions influencing the prognosis. Résumé of results in fifty-five cases.

4. *A Consideration of 200 Cases of Traumatic Injuries of the Abdomen.* FREDERIC A. BESLEY, Chicago.

The paper deals with deductions and conclusions drawn from an analysis of 200 cases of abdominal injuries treated at Cook County Hospital. Thirty of the cases were diagnosed as simple contusions of the abdominal wall. It is intended to show from this analysis that many of these abdominal injuries are not regarded as serious until too late to apply successful surgical therapy and a plea is made for an earlier abdominal section in the doubtful cases.

5. *Benzol in the Treatment of Leukemia.* FRANK BILLINGS, Chicago.

The author will give in a brief retrospect the literature on benzol as a drug in the treatment of leukemia. He will give further details from cases already reported under this treatment and of other cases still under treatment. The astonishing effect of the drug on the blood picture and on the spleen will be noted; the possible great value of the drug in the treatment of the leukemias and its possible danger as a poisonous agent if used in too large amounts or over too long a period of time.

6. *Operative Treatment of Ununited Fractures with Contracture of the Attached Muscles.* P. B. MAGNUSON, Chicago.

1. When to operate.
2. How to prepare for operation.
3. The instruments necessary to successfully operate on bones.
4. Stretching of muscles; discussion of methods.
5. Holding the fragments; discussion of methods.
6. After-treatments; cast or extension, or both.

7. *Mitral Stenosis Complicating Pregnancy.* S. E. MUNSON, Springfield.

1. Examination before or during early months of pregnancy may not disclose this lesion.
2. Early symptoms.
3. Non-appearance of symptoms until late in pregnancy.
4. Importance of frequent heart examinations as a routine during pregnancy.

8. *Displacements of the Colon.* CARL E. BLACK, Jacksonville.

This paper will report two cases of displacement of the colon and call attention to the conditions which favor displacement as well as some of the prominent symptoms, which may lead the practitioner to at least suspect the existence of a displacement of the colon. In one of these cases chronic diarrhea was the most prominent symptom, while in the other case obstinate constipation was equally prominent. Special emphasis will be placed on the use of the x-ray in defining the position of the colon.

9. *Oration in Surgery.* CHARLES L. SCUDDER, Boston.

Stenosis of the pylorus in infancy. What are the indications for medical and surgical treatment? A lantern demonstration of congenital pyloric stenosis.

10. *The Physician and the Defective.* C. B. CALDWELL, Lincoln State School, Lincoln.

11. *Obstruction of the Bowel.* CLIFFORD U. COLLINS, Peoria.

12. Motion Pictures.

13. *Vital Statistics and Water-Supply.* MR. PAUL HANSEN, Engineer State Water Survey.

14. *Care and Feeding of Infants Among the Poorer Classes.* C. G. GRULEE, Chicago.

EYE, EAR, NOSE AND THROAT SECTION

The following list of men have been invited to contribute to the forthcoming meeting of the Eye, Ear, Nose and Throat Section of the State Medical Society:

NOSE

R. J. COULTOS.....Mattoon, Ill.
C. W. GEIGER.....Kankakee, Ill.
J. A. PRATT.....Aurora, Ill.

The Etiology of Hypertrophic Rhinitis.

THROAT

R. C. MATHENY.....Galesburg, Ill.

Dysphonia

F. W. BRODRICK.....Sterling, Ill.

EAR

ROBERT I. BULLARD.....Springfield, Ill.
NORVAL H. PIERCE.....Chicago, Ill.
G. H. MUNDT.....Chicago, Ill.

Subjective Tests for Hearing.

J. HOLINGER.....Chicago, Ill.
A. H. ANDREWS.....Chicago, Ill.

Surgery of the Antrum.

L. OSTROM.....Rockford, Ill.

EYE

H. W. WOODRUFF.....Joliet, Ill.

The Rôle of the Tarsus in Trachoma.

C. B. WELTON.....Peoria, Ill.

A Report of the Examination of the Eyes in General Paralysis of the Insane, in a Series of Fifty Cases.

W. R. FRINGER.....Rockford, Ill.
J. G. YOUNG.....Pontiac, Ill.
C. D. WESCOTT.....Chicago, Ill.
H. GRADLE.....Chicago, Ill.

Urotropin in Ophthalmic Practice.

H. ACHARD.....Chicago, Ill.

Vaccines and Serums in Ophthalmic Practice

C. A. Wood.....Chicago, Ill.

Operations in Glaucoma.

There will be operative clinics, one half-day (first day), also a "get-together dinner" the first evening. papers will be read on the second day.

THE COUNTY SECRETARIES' MEETING

MAY 20, AT 3 P. M.

1. *Organization*.....L. H. A. NICKERSON, Quincy, Ill.
President of the Illinois State Medical Society.
2. *A Booster Sermon*.....ROCK SLEYSER, Waupun, Wis.
Secretary of the County Secretaries' Association of Wisconsin.
3. *Cooperation*.....ALEX. A. CRAIG, Chicago, Ill.
Secretary of the American Medical Association.
4. *Medical Jurisprudence and Malpractice*...W. F. BURRESS, Urbana, Ill.
Member Illinois State Legislature.
5. *The County Society Bulletin*...E. W. FIEGENBAUM, Edwardsville Ill.
Editor of the Original County Secretary's *Bulletin* in Illinois.
6. *The Ideal Secretary*.....T. D. CANTRELL, Bloomington, Ill.
Secretary of the McLean County Medical Society.

PEORIA RAILWAYS TIME TABLE

Leave	C. & A.—North. "Chicago Line."	Arrive
r 12.01 a.m.		r 7.00 a.m.
r 7.15 a.m.		r 1.35 p.m.
r 8.00 a.m.		r 3.30 p.m.
r 12.40 p.m.		r 9.25 p.m.
r 2.45 p.m.		r 10.30 p.m.

Leave	Peoria-Dwight Division.	Arrive
r 8.00 a.m.		r 9.55 a.m.
r 2.45 p.m.		r 9.25 p.m.

Leave	C. & A.—South.	Arrive
r 7.02 a.m.		r 9.15 a.m.
z 12.10 p.m.		z 2.15 p.m.
r 7.00 p.m.		r 8.15 p.m.

Leave	BIG FOUR.	Arrive
r 7.25 a.m.		r 7.10 a.m.
r 11.30 a.m.		z 10.30 a.m.
z 4.05 p.m.		r 2.45 p.m.
r 8.00 p.m.		r 6.37 p.m.

Leave	ILLINOIS CENTRAL.	Arrive
r 7.30 a.m.		r 11.30 a.m.
r 5.45 p.m.		r 6.10 p.m.

Leave	T. P. & W.—East.	Arrive
r 12.01 a.m.		r 7.00 a.m.
r 7.15 a.m.		r 9.55 a.m.
r 8.00 a.m.		r 1.40 p.m.
r 12.40 p.m.		r 3.30 p.m.
r 2.45 p.m.		r 9.25 p.m.
r 6.30 p.m.		r 10.30 p.m.

Leave	T. P. & W.—West.	Arrive
r 7.40 a.m.		z 9.00 a.m.
z 12.20 p.m.		r 11.20 a.m.
r 4.27 p.m.		z 6.15 p.m.
		s 9.40 p.m.

Leave	C. R. I. & P.	Arrive
r 8.00 a.m.		r 6.40 a.m.
r 1.00 p.m.		r 1.25 p.m.
r 5.00 p.m.		r 6.20 p.m.
r 12.01 mid.		r 10.00 p.m.

Leave	ROCK ISLAND LINE.	Arrive
r 7.55 a.m.		r 11.25 a.m.
z 2.55 p.m.		z 4.35 p.m.
r 6.55 p.m.		r 10.55 p.m.

Leave	VANDALIA.	Arrive
z 12.50 p.m.		z 10.40 a.m.
z 5.45 p.m.		z 1.30 p.m.

Leave	M. & ST. L.	Arrive
z 7.32 a.m.		r 10.59 a.m.
r 3.30 p.m.		z 6.50 p.m.
Leave	L. E. & W.	Arrive
r 7.00 a.m.		r 11.15 a.m.
z 11.55 a.m.		z 12.20 p.m.
z 4.30 p.m.		z 3.35 p.m.
s 5.30 p.m.		r 8.30 p.m.

Leave	C. P. & ST. L.	Arrive
r 8.00 a.m.		r 10.55 a.m.
r 12.15 p.m.		r 2.55 p.m.
z 4.45 p.m.		z 6.15 p.m.
s 6.00 p.m.		s 9.10 p.m.
Leave	C. B. & Q.	Arrive
z 7.15 a.m.		z 6.45 a.m.
r 3.00 p.m.		r 12.10 p.m.
r 7.10 p.m.		r 6.45 p.m.

Leave	C. & N. W.	Arrive
r 5.02 p.m.		r 11.52 a.m.
Leave	P. & P. U.	Arrive

Depart.	Arrive.
r 6.20 a.m.	r 2.30 pm
z 6.30 a.m.	r 3.38 pm
z 7.45 a.m.	z 5.00 pm
r 8.05 a.m.	r 5.15 pm
r 9.10 a.m.	z 6.05 pm
r 10.20 a.m.	s 6.30 pm
r 11.33 a.m.	r 9.20 pm
r 1.00 p.m.	r 11.23 pm
z 1.30 p.m.	

r Daily z Daily except Sunday s Sunday only

PEORIA AND PEKIN TERMINAL.

Leave Chestnut and S. Wash. St. every half hour between the hours of 5.45 a.m. and 11.45 p.m. (leaving on the quarter-hour).

ILLINOIS TRACTION SYSTEM.

Leave for Bloomington-Decatur.

x 5.25 am	v 10.10 am	v 2.10 pm	v 6.10 pm
v 6.00 am	x 11.15 am	x 3.15 pm	x 7.15 pm
x 7.10 am	v 12.10 pm	v 4.10 pm	x 9.20 pm
v 8.10 am	x 1.15 pm	x 5.15 pm	x 11.15 pm
x 9.15 am			

Leave for Springfield-St. Louis.

v 6.00 am	v 10.00 am	v 2.00 pm	v 6.00 pm
v 8.00 am	v 12.01 am	v 4.00 pm	v 8.00 pm
	v 11.30 pm	Sleeper Train	
x Local.		v Limited.	

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY

The Adams County Medical Society held its monthly meeting March 10. The attendance was very small, but our doctors are busy. A communication was read from Dr. George N. Koker, chairman of the American Medical Red-Cross Committee. The society declared itself heartily in favor of cooperating with the American Red Cross and for this purpose appointed a committee consisting of the president, secretary and Drs. Center, Ericson and Pearce. Eight physicians were elected to membership, namely: E. D. Brown, Clayton; J. F. Ross, La Prairie; Everett N. Sykes, Beverly; W. Frank Snider, Liberty; J. Lenne Aleshire, Plainville; Albert Garner, Tioga; A. W. Meyer, Quincy; W. J. F. Reiffert, Quincy.

This was to have been a joint meeting of the Illinois State Dental Society, but owing to the inability of the speaker for the dental society to be present, the joint meeting was postponed until the evening of March 27. At this meeting a paper will be read by Dr. D. G. Stine of Quincy, whose subject will be "A Discussion of the Influences that Diseased Conditions of the Mouth, Nose and Throat Have on the Individual's Welfare, and a Consideration of Their Relation to the Community's Health."

ALEXANDER COUNTY

The Alexander County Medical Society held its regular monthly meeting Thursday, February 20, in the Commercial Club Rooms, Cairo. An unusually large number attended.

Dr. W. F. Grinstead of Cairo presented the history of an interesting case of abdominal tumor in a woman aged 40 years that resembled a pregnancy. On attempting to examine the perineum he found an opening only the size of a lead pencil. This had been made by the obstetrician at the time of birth. He opened backward about an inch and was then able to reach with his finger a fecal mass. This was removed and found to weigh two and a half pounds. This caused the tumor to disappear. An imperforate rectum was then discovered anterior to the small opening. A new anus was made by opening the two into each other.

The subject for the evening was "Epidemic Cerebrospinal Meningitis." Dr. C. E. Duncan of McClure, who had recently gone through a severe epidemic, presented the "Symptoms and Course" of this disease. The disease had been very fatal as he had seen it. Altogether there had been twenty cases with sixteen deaths and one recovery so far. There were still three cases under treatment, one only of which he expected to recover. The serum treatment had been used in about half the cases. Though the death-rate had been so high he believed in the specific treatment; it was the only thing that had the power of modifying the course of the disease.

Dr. Flint Bondurant discussed the "Etiology." Ill health and insanitary surroundings were predisposing causes. The specific cause the diplococcus intracellularis. He exhibited under the microscope two slides showing the bacilli in the cells.

Dr. J. M. Gassaway of the local Marine Hospital presented the subject of "General Treatment." While there was nothing in this that was directly curative, much could be done to support the patient and tide him over.

Dr. J. T. Walsh discussed the subject of "Prophylaxis" in an able way, after which the subject was opened for general discussion. In this Drs. A. A. Bondurant, O. B. Cary, R. E. Barrows and others joined.

The application of Dr. C. E. Duncan, Dr. McClure and Dr. R. E. Barrows all of Cairo, were then considered and all were voted into membership.

CHAMPAIGN COUNTY

The Champaign County Medical Society held its regular meeting February 13, at Champaign. Dr. Cleaves Bennett read a paper on "Pleural Effusion" and cited some interesting cases to illustrate the various causes and also the different types of effusion. An attack of measles as a factor in starting up a dormant tuberculosis, and early serous pleural effusion followed by a rapidly developing general tuberculosis was described as a type that is often repeated. Drainage for most cases was advised and all points of the surgical procedure were described.

Dr. E. G. Davis read a carefully prepared paper on the "Complications of Pneumonia." This list of otitis media, brain abscess, pericarditis, endocarditis, arthritis, gastro-enteritis, nephritis and abscess and gangrene of the lung is formidable.

Dr. Yantis spoke on the "Peculiarities of Influenza," and first mentioned its inexplicable modes of travel: the sudden onset of grip in places where it had not been known to exist; the infection of many people simultaneously who had for days or weeks been isolated from the world, as on ship board; the possibility of the so-called "victims" constantly harboring the germs, and the seeming transmission of the infection against the usual rules governing the spread of contagions. The influence of influenza in the production of a systemic depression that predisposes toward pneumonia, tuberculosis, neuralgias about the head and organic nerve troubles attaches to this disease an all around bad name.

Plans for a public meeting in March were discussed and President Gulick appointed Drs. W. K. Newcomb, Stanley and Yantis to make definite plans and arrangements. The president instructed a committee, Drs. McKinney, Burres and Wall, to investigate the present status of contract practice in the county with the view of determining whether in any case the requirements of corporations are in conflict with the by-laws and fee bill agreed to by our members.

Nineteen attended this meeting and we had as visitors Dr. Beard of the University and Dr. Morton of Rantoul.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting, Feb. 5, 1913

A regular meeting of the Chicago Medical Society was held Feb. 5, 1913, with the following program:

1. "Presentation of a Case of Cervical Rib." George W. Hall.
2. "Experiences in Ductless Gland and Brain Surgery, with Presentation of Cases." Illustrated with lantern slides. Allen B. Kanel.

Regular Meeting, Feb. 12, 1913

The evening of February 12 was devoted to a banquet in honor of the ex-presidents of the Chicago Medical Society. The proceedings were abstracted in the JOURNAL for March, page 309 *et seq.*

Regular Meeting, Feb. 19, 1913

A regular meeting of the Chicago Medical Society was held Feb. 19, 1913, with the following program:

1. "Some Original Uses of Bone Transplantation. A Report of 120 Cases." (By invitation.) Fred H. Albee, New York City.
2. "Ligneous Phlegmon of the Abdominal Wall." (By invitation.) W. W. Grant, Denver, Colo.

Regular Meeting, Feb. 26, 1913

1. "Pediatrics. General Medicine and the Public." (By invitation.) A. Jacobi, New York, President American Medical Association.
2. "The Approach to the Kidney and Ureter." (By invitation.) Edward Martin, Philadelphia.

Regular Meeting, March 5, 1913

1. "Diagnosis and Treatment of Enlarged Thymus in Children." Illustrated by lantern slides. (By invitation.) Alfred Friedlander, Cincinnati.

Regular Meeting, March 12, 1913

1. "A New Method of Treating Trigeminal Neuralgia by the Direct Injection of Alcohol into the Gasserian Ganglion." Julius Grinker.

2. "The Dressing and After-Care of Herniotomy Wounds in Infants and Small Children." Coleman G. Buford.

*CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY**Regular Meeting, Nov. 19, 1912*

A regular meeting was held on Nov. 19, 1912, at the Bismarck Restaurant, with the President, Dr. Joseph C. Beck, in the Chair.

PRESENTATION OF CASES

Dr. G. A. Torrison: E. S., aged 68 years, engineer, had been troubled for the past week with difficult and painful deglutition. He had entered the Presbyterian Hospital a year ago, where a diagnosis of Hodgkins' disease had been made. Family history was negative. He denied having had syphilis. Inspection of the throat showed an enormously enlarged left tonsil, which reached nearly over to its fellow on the opposite side. The latter was normal in size. There were enlarged glands in the left side of the neck. The surface of the enlarged tonsil was smooth and presented a reddened and glazed appearance, suggesting a large tonsillar abscess. An incision gave no pus, the knife entered a cavity which proved to be an enlarged crypt. The probable diagnosis then lay between sarcoma and a tonsillar manifestation of Hodgkins' disease, the latter being the more likely.

Dr. J. Holinger: The patient was a painter, aged 32 years. He has suffered from acute otitis media for the last five days, with very copious discharge. There was a tit-shaped perforation in the region of Shrapnell's membrane. The perforation of Shrapnell's membrane is always due to a chronic process, says Bezold. Politzer, on the other hand, insists that he saw perforations in this part in acute inflammations. This case seemed to be an argument in favor of Politzer's theory. Dr. Holinger slit the tit and to-day, two weeks after the demonstration, the tit has disappeared and the perforation was in the posterior upper quadrant. The swelling and the pus must have moved the soft parts. So the case supports Bezold's contention.

Dr. Otis H. Maclay presented a case of suspected tubercular destruction of the nasal cavities, the turbinate tissues entirely gone, much crusting, some odor, bony surfaces exposed in various regions of the nose. Antisyphilitic treatment had been tried without apparent benefit; for the last two months has been under injections of tuberculin, with decided improvement.

RESONATORS, WITH SPECIAL REFERENCE TO THE SCHAEFER APPARATUS

ROBERT SONNENSCHN, M.D.

Resonators are appliances which have the property of selecting out and reinforcing certain sounds. Resonance is the reinforcement or intensification of sounds due to the union of direct and reflected waves. Resonators have been used in various ways by different men, such as Helmholtz, Schaefer, Abraham, Wien, Wastmann and others, for the investigation of many physical problems, among them the analysis of tones, especially the vowels, the study of "interference tones," etc. Although a very simple apparatus, such as a lamp chimney, a tube of cardboard, or a bottle, may serve as a resonator, still the best thing is either a spherical resonator or a metal cylindrical tube, both of which may be connected with the ear. If open at both ends, the pitch of a resonator is higher

than if one end is closed. On the other hand, a resonator is of deeper pitch (a) the larger the air-containing space and (b) the narrower the sound opening happens to be. Tones of medium pitch are the ones most intensely reenforced the very low and the very high ones much less so.

The Schaefer set of resonators consists of four cylindrical brass tubes of different lengths, but the same diameter. One end is open, the other closed by a plate having a central aperture. Over the latter is a conical extension intended to be placed in the meatus auditorius, or to be connected with tubing for introduction into the ear. For occluding the small opening when the resonators are not to be inserted into the meatus, rubber plugs are provided. Each resonator tube fits accurately into another cylinder, but can be moved in and out. The inner tube is graduated in millimeters, and at the same time the tones for which the resonator acts at different lengths are indicated by letters giving the notes of the scale. The gradation corresponds to the tones of the temperate scale based on a' (435 v. d.), at a temperature of 18 C. (about 64.4 F.).

The advantage of the Schaefer resonators seems to lie in their being compact, accurate, comparatively cheap and easily adjusted to any desired tone between A (108 v. d.) and c (1024 v. d.).

Conclusions: Resonators can be used for various purposes: 1. In physical research, in the analysis of tones, etc. 2. In testing tuning-forks to see if the actual tone is the one claimed to be present. 3. For determining the pitch of unmarked forks or that of any other sounding body whose tone comes within the range of the resonators employed. 4. And last, but not least, for testing the absolute duration of hearing for any tone or set of sounds.

DISCUSSION

Dr. Richard H. Brown asked whether, if you get a resonator tuned to about a medium pitch, such as a man talking in a very monotonous voice, that can be used by a person with diminished hearing, to catch enough of the sound vibrations to enable that person to hear better? He wondered if that had been tried.

Dr. J. Holinger did not believe that resonators have been used or tried for the purpose spoken of by Dr. Brown, and he did not believe that it would be feasible. The bulk of the resonators excluded their being carried around by a person. One important application, however, might be this: The resonators of the well-known span from c to g might be used in determining the degree of defect in hearing in children, in order to find out which deaf-mutes could be educated through their sense of hearing. If hearing extended over this well-known span and amounted to hearing the tuning-forks of this pitch for ten per cent. of their normal duration, hearing could be used for educating children.

Dr. Edwin Pyncheon asked Dr. Sonnenschein if he had had any experience with the audiometer. This instrument had a little bell, the tone of which could be modified as desired by the examiner.

Dr. Sonnenschein, in closing the discussion, added a little to what Dr. Holinger had said in answering Dr. Brown's question. It would not be possible to use these resonators very well as an aid to hearing for the reason that, while it is true that the range not only covers the range given by Bezold, that is, from b¹ to g² (these go considerably lower than that—an octave, and also a full octave higher), we must remember that it is the over-tones in the various vowels that give the quality to the voice. Now, even though people speak in a so-called monotone, every vowel has certain over-tones, and each resonator will only resound to one particular tone when adjusted at a certain length.

So far as teaching deaf-mutes was concerned, which was referred to by Dr. Holinger, of course that is very important, but he thinks that the same remarks would apply, namely, that these resonators not only cover this area, but more than that. Regarding Dr. Pyncheon's question about the audiometer, Dr. Sonnenschein has had no practical experience with it. It is an apparatus not for reenforcing sound, but for testing hearing by means of a hammer enclosed in a sounding-box, which is controlled entirely from the outside, so that the patient has no way of

judging what intensity of sound is being produced. This is connected with the ear by tubing as in a stethoscope. One can produce an intensity of sound from 0 to 10, and thus see when the patient begins to appreciate that sound.

Dr. Brown asked whether it is known what the actual difference of pitch is in the vowel tones in monotone talk.

Dr. Sonnenschein replied that even in a monotone the quality of speech depends entirely on the articulation and emphasis, whereas the specific tone would have to have the same pitch. Even if a person speaks in a monotone and pronounces different vowels, they are of different pitch.

Dr. Brown asked what is the difference.

Dr. Sonnenschein said he has forgotten the exact difference, but believes that Wolf showed that there is a range of almost three octaves in pitch of the various vowels and consonants.

THE PHYSIOLOGY OF THE SEMI-CIRCULAR CANALS. A LANTERN DEMONSTRATION

GEORGE E. SHAMBAUGH, M.D.

Dr. Shambaugh pointed out the importance of obtaining a correct idea of the anatomy of the end-organ in the semicircular canal, and the difficulties encountered in making preparations of these end-organs. The end-organ in the semicircular canals is the crista ampullaris, which forms a ridge placed so as to receive the full impact of the endolymph passing from the utricle into the canal or from the canal into the utricle. Both sides and the crest of the crista are covered by hair-cells. Superimposed above the crista is placed the cupola, which is separated by an appreciable space from the free surface of the epithelium. The hairs of the hair-cells project into the under surface of the cupola. The cupola is a stationary cap which is not capable of being displaced by endolymph currents.

ANALYSIS OF THE PHYSICAL REACTIONS WHICH PRODUCE A STIMULATION OF THE HAIR-CELLS OF THE CRISTA AMPULLARIS

1. The stimulation of the hair-cells is the result of an irritation applied to the projecting hairs.
2. The irritation of the hairs is brought about by an interaction between the cupola and the hairs.
3. This interaction is occasioned normally by the impaction of endolymph currents against the sides of the cupola.
4. Only those hair-cells on the side of the crista receiving the impact are stimulated by a current of endolymph.

Conclusions that are still unsettled in the analysis of these physical reactions are:

1. Is the duration of the stimulation of the hair-cells the same as the duration of the endolymph current?
2. Is the duration of the nystagmus the same as the duration of the endolymph?

Since we are able to observe objectively the duration of nystagmus, the answer to these questions can be approached by finding some way of estimating the duration of an endolymph current. Three methods are known by which the duration of the endolymph current can be estimated: 1. The Ewald experiment. 2. The compression test in fistula cases. 3. The fact that in caloric stimulation of the semicircular canal it is necessary, in order to get an endolymph current, that the canal be placed in a vertical position. The endolymph current which is occasioned in this way by caloric stimulation ceases the moment the canal is placed in the horizontal plane. In all three of these experiments we observe that the duration of the nystagmus produced by an endolymph current stops apparently the moment the endolymph current ceases.

PHENOMENA IN ROTATION EXPERIMENT

On starting rotation a patient develops a nystagmus in the direction of the rotation. After rotation has continued for some moments this nystagmus disappears. If the speed of rotation is now accelerated, the nystagmus will again return. On suddenly stopping rotation a nystagmus develops in the opposite direction, which also lasts for a number of seconds before subsiding. The simplest explanation for these phenomena was offered by Breuer and Crum Brown, who explained them as the result of inertia of the endolymph. Breuer gave up this idea later because of the difficulty in accounting for the inertia of endolymph in the small canals producing an endolymph current that would last long enough to explain the duration of the turning and after turning nystagmus. Breuer accepted the conclusions that both on starting and on stopping turning there can be but a momentary impulse to the endolymph. He still believed that the duration of the nystagmus depended on the duration of the stimulation of the hair-cells. In order, therefore, to account for the stimulation of the hair-cells lasting long enough to explain the duration of nystagmus in the rotation tests, Breuer assumes that the momentary impaction of endolymph displaces the cupola. This displacement of the cupola produces a stimulation of the hair-cells that continues until the cupola has been drawn back to its normal position. Barany's explanation for the rotation phenomena is that there are two nystagmus centers, each containing stored energy which requires just so much time to become expended after stimulation. One center produces nystagmus toward the right, the other toward the left. Barany believes that there is but a momentary impulse to the endolymph on starting and on stopping rotation. This produces a momentary stimulation of the hair-cells. The impulse on starting rotation stimulates the center which produces nystagmus toward one side and the impulse on stopping rotation produces stimulation of the center which directs nystagmus toward the other side.

Fundamental objections to both the Breuer and Barany hypothesis are the experiments cited above where in the fistula test and in the caloric stimulation the nystagmus stops the moment the endolymph current stops. If either the Breuer or the Barany hypothesis were correct, the first impact of endolymph in both of these tests should produce a nystagmus which would continue for some moments after the endolymph current ceased.

Other phenomena in the rotation experiment are that the maximum after-nystagmus is obtained after about ten rotations, and that a shorter after-nystagmus is obtained when we rotate a patient a shorter or a longer time, and the fact that after a prolonged rotation in certain individuals there is not only a shorter after-nystagmus, but when this dies out there develops a nystagmus directed toward the same side as the turning nystagmus, a so-called after-nystagmus. These phenomena are not accounted for in Breuer's theory, nor can they be explained with Barany's hypothesis. They are explained, however, as phenomena of fatigue from over-stimulation if we accept the theory that the duration of the nystagmus is dependent on the duration of an endolymph current.

ORIGIN OF LABYRINTH TONUS

The phenomena of labyrinth tonus can be intelligently understood only by keeping in mind the following facts in the physiology of the semicircular canals: 1. An endolymph current stimulates only the hair-cells on the side of the crista receiving the impact. 2. An endolymph current in one direction in a canal produces stimulation of the muscles which direct nystagmus toward one side; an endolymph current in the opposite direction stimulates the muscles which direct nystagmus toward the other side. In each semicircular canal the stimulation which results from an endolymph current which directs nystagmus toward the same side is greater than the stimulation from the endolymph current which directs nystagmus to the other side. In other words, in each crista impulses from the hair-cells on one side produce nystagmus in one direction, and impulses from the hair-cells on the other side produce a nystagmus in the opposite direction, the stronger impulses coming from those hair-cells which direct nystagmus

toward the same side. Labyrinth tonus is the result of impulses constantly emanating from the hair-cells on both sides of each crista. From each labyrinth, therefore, tonus impulses emanate which tend to produce nystagmus toward both sides, but since the stronger impulses are those which produce nystagmus toward the same side, the tonus from a labyrinth, if unchecked by corresponding impulses from the opposite labyrinth, will always produce nystagmus toward the same side. The stimulation of the hair-cells which produces tonus impulses is probably occasioned by the intralabyrinth pulsations associated with each beat of the heart. Any unilateral increase in the pulsations would tend to increase the tonus from a labyrinth which would disturb the normal equilibrium and produce a nystagmus directed toward the same side. This condition is observed clinically in cases of labyrinth congestion occasionally associated with acute otitis media; also in most cases of serious labyrinthitis where the congestion of the labyrinth appears to be the most important change. In the severer types of serous labyrinthitis it has been observed that during the onset and during the later stages of recovery there is a spontaneous nystagmus directed toward the same side, produced apparently by hyperemia in the labyrinth. During the height of the process, when the serous exudate is sufficient to paralyze the action of the hair-cells, the labyrinth tonus in this labyrinth is suppressed, and for a time spontaneous nystagmus is directed toward the normal side.

In cases of diffuse suppuration of the labyrinth the spontaneous nystagmus is directed toward the normal side, because now the normal tonus from this labyrinth is unchecked by impulses from the diseased labyrinth.

ORIGIN OF COMPENSATORY TONUS AFTER DESTRUCTION OF THE LABYRINTH

The disturbance of equilibrium which follows the suppression of labyrinth tonus when one labyrinth is destroyed rapidly disappears because compensatory tonus develops to take the place of the tonus from the destroyed labyrinth. Tonus impulses to the voluntary muscles have two sources: (1) Tonus from the labyrinth, and (2) tonus from extralabyrinth afferent impulses. The sudden destruction of a labyrinth destroys permanently the labyrinth tonus from this side and at the same time apparently suppresses temporarily much of the extra-labyrinth tonus to the same muscles. In the recovery from the disturbed equilibrium which follows the sudden destruction of a labyrinth the first process is the return of the extra-labyrinth tonus impulses which the sudden shock temporarily suppressed. The next step is a compensatory increase in the extra-labyrinth tonus to balance the tonus from the normal labyrinth, and, finally, in this readjustment there often appears to be a compensatory increase in those impulses from the normal labyrinth which tend to produce nystagmus toward the opposite side. It is only in cases of long standing labyrinth destruction, where the tonus impulses from the normal labyrinth which direct nystagmus toward the opposite side apparently increase so as to balance tonus impulses which direct nystagmus toward the same side; in other words, when the impulses from the hair-cells on the two sides of the cristae are equal. When the tonus impulses from the hair-cells on both sides of a crista are equal, then the after-nystagmus in the rotation tests will be as strong toward the defective as toward the normal side. This has only been observed in cases of long standing unilateral labyrinth destruction.

DISCUSSION

Dr. Richard H. Brown believes all of the explanations he has heard, and, so far as he followed Dr. Shambaugh, his explanation, also, presupposes that in rotary nystagmus we have a motion circulation in the canal—take the horizontal canal as an example. If this canal were commensurate with the head, it would be a circle of some four inches in diameter, revolving around its center, but in fact this canal is a little thing of about one-quarter inch or less, and revolving at the end of a radius of some two inches. It seems to him that, revolving in that way, we would have a centrifugal action, the fluid tending to force itself to the outermost circumference and circulating through all of the different canals to the outer part. He would suggest that if some ingenious man could make a

pair of glass labyrinths, enlarged, and fill them with fluid containing a floating pigment, then mount them on a bar of perhaps four feet in length, in exactly the same relation, and rotate them, as in a centrifuge, and then stop them, he could observe the actual play of the pigment in the glass index. Thus far the theories advanced have never seemed convincing to him.

Dr. E. R. Lewis of Dubuque, Iowa, believes all the members present were greatly in Dr. Shambaugh's debt for the presentation of this very admirable discussion. He wished particularly to say one thing: When Dr. Shambaugh presented this matter some year and a half ago, he could not accept as plausible his idea that nystagmus in one direction was caused by the influence of the cells on one side of the crista, and nystagmus in the other direction was caused by the influence of the cells of the other side of the crista. At that time the doctor did not bring out the point that in this conception the cells on one side exceed in their impulse value the cells on the other side; and the objection which he raised at that time, that this theory was untenable when we consider that nystagmus is produced by the influence of the cathode, which stimulates *all* the cells *equally* at the same time, was, he thinks, valid. But now that Dr. Shambaugh has explained that he considers the cells, for instance, in the anterior vertical canal on the utricular side of higher value than the cells on the canal side, and the cells on the canal side of the horizontal of higher value than those of the utricular side, the objection which he raised is satisfactorily disposed of. He thinks Dr. Shambaugh's theory not only plausible, but very acceptable.

Regarding what the essayist said about the influence of the extra-labyrinthine tonus in comparison with the influence of labyrinthine tonus: He thinks there is a great deal to suggest that the relative value of the extra-labyrinthine tonus is very great. Consider, for instance, that while awake, whether in sitting or standing still, the opposing groups of skeletal muscles are evenly balanced in their contractions, by reason of the tonogenetic current from the afferent impulses, but when we commence to lose consciousness we commence to fail to perceive afferent impulses and, coincidentally, our muscle tonus begins to diminish. With the onset of sleep in sitting position, for example, which gives the pull of gravity a chance to exert its influence on the upright head, the first evidence of that diminution of tonus is the nod. The muscles which have held the head upright unconsciously, by reason of that muscle tonus, are relaxed. It cannot be due to labyrinthine tonogenesis *alone*, because in the very nature of things labyrinthine tonus impulses must go on while asleep as well as awake. It has to do, therefore, with apperception, and if tonogenesis were overwhelmingly of labyrinthine origin, that is, if the amount of tonus impulses emanating from the labyrinth overwhelmingly out-measured those emanating from other extra-labyrinthine sources, we would not find muscle tonus beginning to diminish when we commence to lose consciousness, and atony commensurate with and coincidental with unconsciousness.

Dr. George W. Boot said there is one law in nystagmus which he has never seen mentioned, and which will help in remembering the directions, namely: Nystagmus is always in the opposite direction to the current in the endolymph. While he thinks Dr. Shambaugh is undoubtedly right with reference to tonus from the labyrinth, namely, that the pulsations of the heart give rise to the greater amount of tonus, he believes that a great deal results from sound waves. The semicircular canals are in such intimate relation with the auditory portion of the labyrinth that sound waves which stimulate the cochlea are almost certain to stimulate to some extent the end organs of the semicircular canals. A good illustration of this tonus is in the action of our muscles when some unexpected noise occurs, for instance, when writing, if an unexpected noise occurs, there is a break in the writing. It is the same phenomenon which makes you hold your breath when you see a person walking in a particularly dangerous place. You do not make a sound because if you did the sound waves would increase the tonus of his muscles and the greater contraction of the stronger muscles would disturb his balance and cause your friend to fall.

Dr. J. Gordon Wilson was sure that the members all agreed in acknowledging their indebtedness to Dr. Shambaugh for the interesting discussion and the way in which he placed before them some of the problems involved in the physiology of the labyrinth. His only regret is that the essayist tried to give too much. The subject bristles with difficulties which one would like to discuss at length. Many questions suggest themselves. For instance, the one raised by Dr. Boot—the relation of hearing to the tonus labyrinth. There is no doubt at all in Dr. Wilson's mind of this relationship. He has frequently observed in animals, after one labyrinth had been destroyed, that stimulation of the other ear by sound waves would immediately cause that animal to show a reaction indicating stimulation of the labyrinth. We are all agreed that the labyrinth is one of the most important peripheral organs for tonus, but at present he finds great difficulty in accepting Dr. Shambaugh's hypothesis regarding its origin. In discussing tonus it ought to be made very clear that we know tonus chiefly through its increase or diminution; and that of the tonus which exists when the body is at rest, the continuous tonic reflexes, our knowledge is very indefinite. We know that mechanical irritation of the labyrinth and of its nerves will produce alterations of tonus. Also, from observations on the muscles—especially the eye muscles—we must conclude that when the body is at rest there is also an influence constantly going from labyrinth to these eye muscles. But where does this tonus originate, and how is it caused? Brauer believes it originates in connection with the otoliths. Ewald believes it is produced by cilia movement. There is also the physical pressure theory, under which head one may class such an hypothesis as that of Sydney Scott, who looks for an explanation in the heart's action. To all these serious objections can be urged, which it would take too long to discuss. At present we must conclude that as to how and where this permanent reflex is produced we have not sufficient knowledge.

Dr. Shambaugh suggests that the hair-cells play an important part in the production of tonus by pull or by pressure. We do know that in the horizontal canal of birds movements of endolymph toward the ampulla cause movements opposite to and greater than those from ampulla to canal. But this exists only for the horizontal canal, and is the reverse in the superior. We would require to suppose, on Dr. Shambaugh's hypothesis, that reversal has occurred in the structure of the ampullae in the two canals, of which we have no anatomical knowledge. An easier explanation would be an hypothesis in regard to the nerve distribution to these parts along lines he has indicated elsewhere.

Dr. Wilson cannot agree with Dr. Shambaugh that the compensatory action of the tonus comes from the other ear. Rotation after one side labyrinth destruction speaks against such a hypothesis. In animals—for instance, the dog—destruction of the labyrinth results in definite torsion of the head, which is permanent, though the animal recovers from the destruction nystagmus in two or three days. So there are certain muscular actions for which he never compensates, and some for which he does. Now, if the other labyrinth is destroyed, within a short time the head readjusts itself. Here the second labyrinth has not compensated, but may have played some part in preventing the compensation. In such cases he cannot see how the phenomena are to be accounted for by a compensatory mechanism lying in the semicircular canals. On the other hand, positive evidence pointing to the cerebrum as being the seat of the compensation has been given in a recent paper by Wilson and Pike (*The Effects of Stimulation and Extirpation of the Labyrinth of the Ear and their Relation to the Motor System*), read before the Royal Society of London in June, 1912, and published in their *Transactions*.

There are one or two points in all discussions on the physiology of the labyrinth that ought to be clearly understood. One is in regard to the so-called currents of the endolymph. It is unfortunate that the word current is used for movements of the endolymph in the semicircular canals. Currents are unthinkable. What probably occurs is an alteration in pressure. This view finds expression in the new generally accepted Brown-Mach-Brauer hypothesis.

Again, what comes primarily from the labyrinth is not the nystagmus or double movement, but a deviation, which corresponds to the slow phase in the

ocular movement. The quick phase in the ocular movement is extra-labyrinthine, and one of the points still in dispute is where it originates.

The paper by Dr. Shambaugh was full of information and its interest is increased by the fact that he drew most of his references from man, the ultimate test to which all our experimental work must be applied. In animals we can perform more definite lesions than is possible in man, and, watching their outcome, can arrive at data which we can apply to pathologic conditions in our special work. We strive to bring these experimental and pathologic conditions into agreement. Whether they agree or not, we are ever hopeful that the outcome will be a clearer conception than we now have of the physiology of the labyrinth.

Dr. Boot said that both Dr. Shambaugh and Dr. Wilson spoke of the greater sensitiveness of the cells on one side of the crista, but did not offer any suggestions as to why this should be. Barany has given a possible explanation, namely, that the nerve supply on one side of the crista may be greater than on the other.

Dr. J. Holinger mentioned some experiments published more than ten years ago by Dr. Fischer, in connection with what Dr. Wilson said. Dr. Fischer destroyed one labyrinth completely in a dog. The dog was very sick for a few days, but recovered after about six or seven weeks. Then the other labyrinth was destroyed. After this the dog was sick again, though more seriously, and recovered much more slowly than from the first operation. Then he took other dogs and destroyed a certain part of the cortex of the brain, behind the Rolandic fissure. The dog showed no direct result from this destruction. When, however, in this dog he destroyed one labyrinth, the dog did not recover, and was unable to stand on his feet again. It would have died of inanition if it had not been fed artificially. That would mean that this part of the cortex is capable of taking the place of one labyrinth, because if that part of the cortex was not destroyed the dog would recover. How does that agree with the theory of peripheral tonus?

Dr. Shambaugh, in closing, said that Dr. Brown raised the question, whether the centrifugal force might not work to check a motion of the endolymph in the canals, especially since these canals are located at some distance from the pivot of rotation. This question has been brought up before, and he believes there is no difficulty at all in accounting for the motion of the endolymph in a mechanism of this sort. Dr. Brown also suggested the construction of a model to demonstrate exactly what the reactions are in the semicircular canals. This, of course, is the ideal, if it were only possible to construct such a model, but even if it were possible to devise a model that would resemble approximately the semicircular canal mechanism, such a model would be lacking in the finer membranous structures which no doubt influence decidedly the physical reactions resulting from rotation. He cannot see how one could possibly construct a model that would be of any assistance in this problem. The same question has come up in connection with the action of the membrana tectoria, and it has been suggested that one must devise a model which will demonstrate how the membrana tectoria responds to sound impulses. Of course, it is out of the question to construct such a model, since in the first place we don't know exactly what the physical properties of the membrana tectoria are, and, in the second place, even if we did know what these properties are, the mechanism is entirely too delicate and intricate to permit of imitation. Ewald at one time constructed a model in which he placed a taut rubber membrane, which was devised to illustrate the response in the membrana basilaris to the impulses of sound waves. This glass model permitted Ewald to photograph the vibrations of this rubber membrane, as it responded to tones of different pitch. Ewald argued that this illustrated the manner in which the membrana basilaris responds to sound waves. This work of Ewald's attracted a great deal more attention than it deserved. There is no more resemblance between the model constructed by Ewald and the membrana basilaris than between a stretched sheet and strings of a piano.

Dr. Boot and Dr. Wilson suggest that the sound waves entering the ear may pass up through the vestibule and thus bring about a stimulation of the hair-cells of the crista and account in this way for the origin of labyrinth tonus. It would seem that the close anatomic relation between the two parts of the labyrinth might suggest that the same impulses could stimulate the two sets of end organs. It would be interesting if experiments could be devised that might demonstrate this. He does not see that the observation pointed out by Dr. Boot, that a sharp sound startles a person, is necessarily a proof that this is the result of the increased labyrinth tonus.

Dr. Lewis suggests that extra-labyrinth tonus impulses are more important than the tonus from the labyrinth. It would seem a priori that the tonus impulses emanating from a mechanism that has been set aside for the purpose of supplying tonus would be more delicate and more important than the more primitive tonus impulses that emanate from other sources. He does not know of any way by which it is possible to determine whether the labyrinth or the extra-labyrinth tonus impulses are the more important.

Dr. Lewis asks whether he believes that the principal function in the semi-circular canals is to give tonus?

Dr. Shambaugh is inclined to believe that the tonus function of the semi-circular canals is as important as any function they may have.

Dr. Lewis thinks that the chief function of this whole apparatus is to sense motion, and that tonus is only a secondary function. He asked Dr. Shambaugh whether he does not believe that the extra-labyrinth tonus impulses disappear with loss of consciousness?

Dr. Shambaugh does not see any reason why all the extra-labyrinth tonus impulses must necessarily stop with loss of consciousness, especially if these extra-labyrinth tonus impulses have their origin in the action of the viscera, such as the pulsation of the heart and the act of respiration.

Dr. Lewis suggests that the nodding which occurs when one falls asleep in a chair is an evidence that the extra-labyrinth tonus disappears with loss of consciousness.

ENGLEWOOD BRANCH, CHICAGO MEDICAL SOCIETY

Regular Meeting, Englewood Branch, Chicago Medical Society, March 4, 1913.

The March meeting of the Englewood Branch was held on the evening of March 4 at the Englewood Hospital.

Dr. C. Hubart Lovewell gave the history of a most interesting case of severe persistent headache, vomiting, coma and death in ten hours. He entered on a brief, yet thorough, discussion of the case which he had diagnosed as one of aeromegalia.

The report of the autopsy made by Prof. H. Gideon Wells of the Chicago University was most ably and entertainingly presented by Dr. F. K. Bartlett, also of the Chicago University. Dr. Bartlett brought out many instructive points. Specimens and slides were shown.

The work of Dr. G. J. Hagens in his presentation of obstetric demonstrations on the manikin was of the highest order, very instructive and appreciated by all. He covered the ground in a thorough manner. First taking up the normal pelvis, giving the anatomic points of interest to the obstetrician, the various pelvic diameters, etc. He showed various pelvices, normal and otherwise. Fetal head diameters were given and their relation to the birth canal discussed. Normal labor was most beautifully demonstrated. The various presentations—head, breech, transverse, brow, face and in fact every presentation to which the unborn child is heir were demonstrated. Likewise the various positions. In finishing his highly instructive and interesting work of the evening, Dr. Hagens gave a masterful demonstration of the application of forceps.

The meeting proved to be one of great interest, highly instructive and everyone felt that he had been amply repaid for coming. The attendance was fifty-two.

A. G. BOSLER, Secretary

EFFINGHAM COUNTY

The regular monthly meeting of the Effingham County Medical Society was held at the City Hall, Effingham, Feb. 11, 1913, at 1 o'clock with Dr. Taphorn in the chair.

Minutes of last meeting read and approved. A motion was made by Dr. Brooks that the board of censors act as a committee on resolutions. Carried.

Letter from Dr. Dorsett read and a motion made by Dr. Burkhardt that we call a special meeting on February 25 to hear Dr. Dorsett. Carried. Board of censors reported favorably on the application of Dr. Stein of Altamont and the doctor was duly elected a member of the Society. As the speakers on the program failed to appear a round-table talk on pneumonia was proposed. Very interesting remarks on treatment and method of handling cases were made by Drs. Burkhardt, Brooks, Bing and Taphorn. Dr. Burkhardt gave a short talk on some points of "Ethics."

A motion to instruct the secretary to communicate with the proper authorities about securing a man to work the field for new members was made by Dr. Brooks, seconded by Dr. Bing. Adjourned at 3:30 o'clock to meet again for call meeting February 25.

Meeting of Feb. 25, 1913

Meeting called to order by president. Dr. Dorsett of St. Louis, introduced by Dr. Taphorn, gave a very interesting stereopticon lecture on the repair of the perineum and the significance of hemorrhages from the genitals in women over 40 years old. There was a goodly attendance of the members. In the evening Dr. Dorsett gave an address to the citizens at the Court House.

Meeting of March 11, 1913

The meeting of the Effingham County Medical Society was called to order by the president, Dr. Taphorn. Minutes of the previous meetings read and approved.

Business session called. Motion by Dr. Buckmaster that the resolutions committee draw up resolutions favoring a medical department of the University of Illinois. Motion carried.

Motion made that the board of censors act on the suggestion of the secretary and use their judgment in the matter of the list of non-members to be submitted to Mr. Franklin Young for solicitation. Motion carried.

Motion that it is the sense of this meeting that we discontinue the use of cards in papers except such papers, magazines, etc., as are recommended by the board of censors. Motion carried.

Motion on resolutions regarding state board presented by Dr. E. Buckmaster and referred to the resolutions committee.

Program: Dr. W. L. Heizer of Bowling Green, Ky., state registrar of vital statistics, was introduced by Dr. Burkhardt. Dr. Heizer gave a very interesting and instructive talk on results accomplished in Kentucky through careful reports of vital statistics and the cooperation of physicians and state officials. The lack of complete reports of births and deaths makes our records worse than none because they show a false ratio.

Dr. C. C. Holman read a paper on "Pneumonia and Pneumococcic Infections." This was a paper well worth listening to and showed a great deal of thought and time in preparation and research.

Dr. Diehl of St. Louis, formerly of this county, made a few remarks. Discussion was opened by Dr. Brooks on both paper and resolutions before the house. After a report by the censors favoring a vote by the society on resolutions presented, the vote was taken and resolutions adopted.

Meeting adjourned at 4 p. m.

Dr. Heizer gave a public lecture in the evening; subject, "More Life."

GREENE COUNTY

The regular meeting of the Greene County Medical Society was held at the City Council Room at White Hall, Friday, March 14, 1913. The meeting was called to order at 11 a. m. by the president, Dr. Howard Burns. Members present were: Drs. Howard Burns, J. W. Adams, James Squires, J. O. DeCourey of Carrollton, H. W. Smith of Roodhouse, H. W. Chapman, G. W. Burns, F. N. McLaren, L. O. Frech and H. A. Chapin of White Hall.

The secretary reported that the constitution, by-laws and minutes were destroyed by fire in his office on February 16, and the report of the previous meeting, which was published in one of the local papers, was read and approved. None of the censors being present, the president appointed Drs. Chapman, Adams and Squires censors pro tem. Motion made by the secretary and carried that the president appoint a committee of one to draft a new constitution and by-laws for adoption at the next meeting, as the original had been destroyed. Dr. Chapman was appointed.

The applications of Drs. L. O. Hamilton, J. O. Cravens and H. W. Garrison for reinstatement were read and on motion of Dr. Chapman they were ordered reinstated. The applications of Dr. J. O. DeCourey of Carrollton, Dr. C. C. Wood of Rockbridge, and Dr. H. C. Campbell of White Hall for membership were read and reported to the board of censors. The secretary reported favorably upon the applicants, and on motion of Dr. H. W. Chapman the secretary was ordered to cast the ballot for Drs. Wood, DeCourey and Campbell as members.

On motion of Dr. Squires, Dr. Chapin was elected delegate and Dr. Howard Burns alternate delegate to the state meeting to be held in Peoria, May 20-22, 1913.

The secretary reported the death of Dr. E. K. Shirley, a member of the Society, and moved that a committee be appointed to draft resolutions expressing sympathy. President appointed Drs. H. W. Chapman, L. O. Frech and H. A. Chapin as said committee.

The secretary stated that the question of establishing medical defense, which includes all the features of the medical defense associations, had been raised by Dr. Moyer at the last meeting of the State Society, and suggested that the same be discussed by each county society before the next meeting of the State Society and instruct their delegate in regard to what action he should take. Motion made by Dr. Chapman and carried that the delegate be instructed to use his influence to secure the medical defense organization in connection with the State Society. Meeting adjourned for dinner.

Called to order at 2:30 p. m. Dr. Howard Burns read a very interesting and instructive paper on "Therapeutics of Iodin," which was discussed by all present. Censors reported that the next meeting would be held at the Belltown Spring, June 13, 1913. Same to be a picnic to which the physicians and their families were invited.

The following resolutions were presented and adopted:

WHEREAS, Dr. E. K. Shirley, a member of the Greene County Medical Society, has been suddenly taken from our midst by death; and

WHEREAS, The Greene County Medical Society greatly feels the loss of Dr. Shirley's association and fellowship with the members of this Society; therefore be it

Resolved, That we hereby wish to express our sympathy to the various members of his family; and be it further

Resolved, That a copy of these resolutions be spread on the minutes of this Society and a copy of the same be sent to the family of the deceased, and also that one be sent to the ILLINOIS MEDICAL JOURNAL for publication.

Signed: H. W. CHAPMAN.

L. O. FRECH.

H. A. CHAPIN.

Committee.

There being no further business the Society adjourned.

H. A. CHAPIN, Secretary.

MADISON COUNTY

Regular Meeting, Feb. 7, 1913

The Madison County Medical Society held its regular monthly meeting at Edwardsville, February 7. This was one of the best meetings ever held. Dr. Carl E. Black of Jacksonville, who was expected to read a paper was unavoidably detained and in his absence Dr. R. W. Mills of St. Louis was secured. He delivered a lecture on the "Stomach," illustrated by x-ray pictures showing normal and abnormal conditions of that very valuable organ. Also showing ulcers, cancers, constrictions, hourglass stomach, etc. The talk and exhibit were a revelation to his hearers and had a tendency to entirely revolutionize many of our former conceptions of the positions and size of this part of the alimentary tract. Dr. Mills' address was a very instructive and interesting one and he was given a vote of thanks for coming to us at a moment's notice and also for his very acceptable efforts. He was also cordially invited to visit us again on some future occasion.

Five new members were received in this society: Dr. Edward N. Hagin, Granite City; Dr. Wm. H. Enos, Alton; Dr. Thomas C. Smith, Wood River; Dr. Wm. E. Range, Glen Carbon, and Dr. Theo. F. Reusch of Collinsville.

The secretary was instructed to convey the thanks of the Society to Dr. W. E. Fischel of St. Louis for his lecture recently delivered in Alton on the subject of "Cancer" under the auspices of the Society. As many of the speakers invited to address us use illustrations in connection with their papers, the Society thought it advisable to purchase a stereopticon, and Drs. Ferguson and Fiegenbaum were appointed a committee to ascertain the cost of a machine and report at our next meeting. A committee consisting of Drs. Luster, Burroughs and Spitze was appointed to confer with a committee of the St. Clair County Medical Society to arrange for a joint meeting of the two societies at a convenient point. Dr. J. B. Hastings reported that the officers of this society had been elected as the officers of the Madison County Anti-Tuberculosis Society. Dr. E. W. Fiegenbaum suggested that Dr. F. E. Tulley of Granite City act as secretary of the Anti-Tuberculosis Society, and Dr. Tulley was duly elected to that position. The matter of the extension of the benefits of the medical defense fund was introduced by a letter from Dr. Moyer and the subject was fairly well discussed and the whole subject was referred to a committee consisting of Drs. Burroughs, Smith and Luster who will investigate and report at our next meeting, when our delegate will be instructed how to vote on the proposition. This is a matter of vital interest to every member and your wishes in this regard ought to be on record before we vote.

Present: Drs. Hastings, Zoller, Pfeifferberger, Burroughs, Cook, Smith, Luster, Sharp, Oliver, Vogt, Hirsch, Ferguson, Barnsback, Sutter, Wahl, Robinson, Sims and E. W. Fiegenbaum.

Regular Meeting, March 7, 1913

The Madison County Medical Society met in Granite City March 7, and quite a number of the regular attendants were present, but the great majority of our members were conspicuous by their absence. The committee on medicolegal defense reported a recommendation that instead of an assessment of \$10.00 per member for this purpose, the amount be fixed at \$2.00 per member per year for five years. The delegate was instructed to assist in carrying out this plan, but failing in this, to vote for any measure by which the benefit of the defense fund would be extended. Dr. Charles H. Neilson of St. Louis, Professor of the Theory and Practice of Medicine of St. Louis University, gave us a very instructive address on the "Treatment of Hyperacidity." The doctor is a very fluent and impressive speaker and seemed to be loaded with a vast amount of very valuable information on this subject, and his lecture was much appreciated by the members present. The next meeting will be held in the Renfro Hotel, Collinsville, on April 3, in conjunction with the St. Clair County Medical Society.

MONTGOMERY COUNTY

The Montgomery County Medical Society met in regular session on the afternoon of January 21, at St. Francis Hospital, Litchfield, with the following in attendance: Drs. P. M. Kelly, G. A. Clotfelter, L. S. Brown, Z. V. Kimball, C. H. Lockhart, I. O. Wilcox, J. D. Colt, L. G. Allen, F. C. Blackwelder, M. W. Snell, H. F. Bennett, G. A. Sihler, Sr., and G. A. Sihler, Jr. Drs. G. L. Armstrong and S. B. Herdman of Taylorville were guests of the Society.

Dr. Lewis Wine Bremerman of Chicago was the guest of honor at this occasion. He devoted the afternoon to a most instructive genito-urinary clinic. The diagnostic value of cystoscopy and ureteral catheterization was impressively demonstrated in two cases. A suprapubic prostatectomy, which was brilliantly executed, concluded the afternoon's work. This patient made an uneventful recovery and left the hospital on the fourteenth day.

MORGAN COUNTY

Saturday, March 8, Dr. Ludwig Hektoen of Chicago presented the subject "Milk Epidemics," or the relation of impure milk to disease, to a good sized audience at the High School Auditorium, Jacksonville.

Dr. Hektoen showed clearly the relation of epidemics of scarlet and typhoid fever, diphtheria and septic sore throat to the milk-supply, which was the carrier of these respective infections. Dr. Hektoen advocated proper pasteurization of milk by the "holding process," that is 149 degrees for twenty minutes, as well as general cleanliness in gathering, proper cooling and proper distributing of milk to consumers.

The lecture was well received and is acting as an educational factor which will we hope ultimately help in getting a good milk-supply for Jacksonville. Preceding the lecture an informal dinner was given at the Peacock Inn at which were a number of members of the Medical Society and the educational committee of the Woman's Club, under the auspices of which two societies Dr. Hektoen gave his lecture.

On March 13 occurred the regular meeting of the Society. A preliminary report of the milk committee was considered. The source of the milk-supply is from numerous small dairies and one creamery company which pasteurizes its product. The state law and city ordinances were read and seemed to be powerful enough. The small salary of the city health physician, twenty-five dollars per month, does not seem a proper incentive to much activity along public health lines. The committee's work will be continued until results are produced.

Drs. M. F. Woods, Waverly; J. K. Elder and J. H. Spencer, Murrayville, and Emanuel Sipes, Jacksonville, were elected to membership.

GEORGE STACY, M.D., Secretary.

STEPHENSON COUNTY

The members of the Stephenson County Medical Society met February 21 at lunch at the Freeport Club. The meeting was attended by members residing in the city; the president, Dr. Charles L. Best, presided.

A committee was appointed consisting of Drs. Stealy, Rideout and Snyder, whose duty it is to submit amendments to the present constitution of the society looking toward the establishment of a Freeport section of the county organization. It is hoped to have more frequent meetings of the doctors and that these meetings be held monthly. It is proposed to have these affairs of a social as well as a literary nature.

The following committees were announced: Program Committee, Drs. J. S. Clark, W. T. Collins, I. G. Voight. Judiciary Committee, Drs. D. C. L. Mease, N. C. Phillips, K. F. Snyder. Library Committee, Drs. J. H. Stealy, A. E. Smith, Mary L. Rosenstein. Bulletin Committee, Drs. W. L. Karcher, C. J. Leavy,

Sarah E. Hewetson. Committee on Red Cross Medical Work, Drs. Charles L. Best, J. Sheldon Clark, J. H. Stealy, Robert J. Burns, James A. Poling.

A letter was read which had been received from the Committee on Red Cross Medical Work of the American Medical Association, in which the county medical society was asked to cooperate with the American Red Cross in the matter of medical work.

VERMILION COUNTY

The February meeting of this Society was a great meeting. Dr. Jacob C. Fisher read an excellent paper on "Serological Diagnosis and Therapy of Tuberculosis." Dr. Robert Clements opened the discussion with an interesting paper and talk on the diagnosis phase.

Dr. F. A. Baumgart followed with an able paper and talk on "Serum Therapy of Tuberculosis."

The men who presented the program came boldly out in their assertions, which showed they were familiar with the subject in hand. They made it a valuable evening for those present. Drs. McCaughey, E. G. C. Williams and Cooley gave very interesting talks. Drs. McCaughey and Williams agreed with the authors, but Dr. Cooley declared the use of serums in fighting tuberculosis "is like shearing a pig—there is more squeal than wool."

Dr. Dale reported the progress made by the Fee Bill Committee. The committee decided that it is impractical to establish a uniform fee bill for the whole county. Owing to custom, the fees are higher in Danville since it is more expensive to maintain offices and living expenses; bad bills, etc., with which the Danville physicians must contend.

The rural physicians thought their services were worth just as much to the patients as the city physician's—this nobody doubts, but while the fees they have been in the habit of charging, were so much lower they thought it unwise to raise theirs to the raised bill of the city physician. Consequently it was decided to advise the president of the county society of this dilemma. The president then appointed three additional physicians of Danville to confer with Drs. Glidden, Dale and Joseph Fairhall. These men were Drs. Barton, Reagan and Baumgart.

The fee bills drafted by the two divisions of committees are to be presented to the county society for its approval or disapproval. Dr. Dale acted as their secretary.

WINNEBAGO COUNTY

The Winnebago County Medical Society met at the Nelson Hotel, Rockford, March 11, 1913, with Dr. Lofgren in the chair. The minutes of the previous meeting were read and approved.

The following doctors were admitted to the Society as members: Harry Parker, Pecatonica; Sikes, Roscoe; O. A. Olson, Rockford; F. Weld, Rockford.

Program: Dr. E. Weld read a paper on the "Significance of Blood Findings." Dr. R. C. Bourland spoke briefly on "Clinical Features of Acute Pleurisy and Acute Empyema." General discussion followed both talks. The preparation and dispensing of certified milk in Rockford was next discussed. The Society wished it understood that it favored the use of certified milk, and that it looked with favor to any party or parties wishing to manufacture and dispense the same.

The next meeting will be held the second Tuesday in April, and at that time Dr. Fischkin of Chicago will address the Society on "Syphilis." Following this a banquet will be held at the Nelson Hotel.

In answer to a letter from Dr. Harold Moyer of Chicago, on medical defense, the Society looked with favor to this new movement.

NEWS OF THE STATE

NEWS ITEMS

—The Board of Supervisors of Champaign County have decided to have a tuberculosis hospital constructed at the county farm.

—Dr. H. E. Ronald of Mattoon, charged with performing a criminal abortion, has secured postponement of hearing of his case until the September term of court.

—The Woman's Home Missionary Society of the Methodist Church will open a hospital in Litchfield in the near future. It will be known as the Holder Memorial Hospital.

—Dr. Wm. E. Quine of Chicago will speak to the members of the Decatur Medical Society at its annual banquet, April 15, on "Work of the Physician in Connection with that of the Surgeon."

—Charles A. Sedlack, charged with deserting, for a nurse, the wife who had aided him financially in getting through medical college, was recently sued for separate maintenance in the Cook County court.

—One Dr. W. A. Gray has been working in the region of Princeton, exploiting a goiter cure. The Princeton *Tribune* prints an article from the Walnut *Mail*, expressing indications that fraudulent methods were used by this man.

—Algonquin, a village of 500 inhabitants in McHenry County, was thrown into great excitement recently by the sudden appearance of forty-nine cases of scarlet fever among the school children. Fortunately, the epidemic was mild.

—Dr. Everett Mayos, formerly connected with the state hospital at South Bartonville, and later of Arizona, Joliet and Chicago, has been sued for divorce by his wife, who was formerly a nurse at the Bartonville Hospital, on the grounds of extreme cruelty.

—Dr. J. E. White of Freeport, has sued the Burlington Railroad for \$10,000 damages for being put off the train at Milledgeville instead of Chadwick, and requiring him to hire a conveyance and ride fourteen miles across heavy country roads where he had been summoned to perform an operation.

—S. C. Brown, traveling under the assumed name of "Dr." G. W. Davis, of the fictitious emergency hospital of Peoria, was recently arrested in Galesburg for obtaining money under false pretenses. It is stated that many people in McDonough County had given this man considerable money for "curing" eye diseases.

—A Chicago doctor, giving the name of E. C. Martin, victimized a number of farmers in the vicinity of Harvard during a canvass of rural sections, by prescribing remedies that would cure all possible ailments. One well known Dunham farmer was called on to pay a note for \$127

for the remedies left with him. At the time the farmer signed what he supposed was a contract in which it was stipulated that a sure cure was included, but which later turned up as a promisory note. Some six or seven farmers in that vicinity were taken in in like manner.

—Dr. A. J. Clay of Hoopeston, aspires to become a member of the State Board of Health. We will be pleased to see Dr. Clay appointed to that place. In connection with this the following endorsement was unanimously agreed on by the Vermilion County Medical Society:

"To Governor Edward F. Dunne, State of Illinois.—We, the Vermilion County Medical Society, constituting a membership of ninety-two, do hereby unanimously endorse our member, Dr. A. J. Clay of Hoopeston, as being an ethical and upright physician, and fully capable of filling the position he is seeking as a member of the Illinois State Board of Health."

—Rev. Polk Goodson, at Springfield, in a sermon preached Sunday, March 16, uttered the following language regarding the medical profession: "I question if any man is more loyal to our physicians than I; they are the country's saviours: but there has crept into the profession, while the ethical physician has been healing his patients, a great crowd of incompetent and unscrupulous men, who have hidden their crime under the cloak of their profession. They starve, they rob, they kill, the widow, the orphan, the ignorant—they are common vultures, and society ought to be rid of them now, and society will rid itself of them. The next investigation will be with the doctors; the ethical doctors will welcome it, and society will be relieved of a human octopus." His language regarding the unethical lawyer was no less startling.

PERSONALS

Dr. J. C. Fults of Waterloo, has been appointed County Physician of Monroe County.

Dr. Herman Milbacher of Aurora, while running to catch a car, fell and injured his side.

Dr. E. O. Woods of Chicago has removed to Freeport, where he will be employed by Dr. K. F. Snyder.

Dr. J. E. Snyder of Chicago has removed to Moline, where he will open up offices in the Kerns Building.

Dr. J. Wilbur Moreland, lately of Penfield, has removed to Maxbass, N. D., where he expects to continue medical work.

Dr. Julius Gruenewald has removed from Worden to St. Louis, which leaves Dr. C. E. Dorr the only physician in Worden.

Dr. G. W. Bradley of Waverly desires us to announce that he was not placed in jail as stated in the January issue of the JOURNAL.

Dr. C. U. Collins, after a very successful year as president of the Peoria Association of Commerce, has retired from that office.

Dr. John Bartlett of Galesburg, who has been in a Chicago Hospital for some time past as the result of a serious illness, has recovered.

Dr. Frederick Sidley of Peoria is lying at St. Francis Hospital suffering from painful injuries received in a fall from a street car recently.

Dr. John Colwell who has held the position of assistant warden and head intern at the Cook County Hospital, Chicago, has located at Foosland.

Dr. J. C. Dallenbach is recorded a member of the Champaign County Medical Society by transfer from the King County Medical Society, Washington.

Dr. J. L. Hawkins has sold his practice in Watseka to Dr. H. W. Clifton of Lacon, and will remove to Chicago, where he formerly practiced. Dr. Clifton was formerly connected with the Marietta Phelps Hospital at Macomb.

Dr. George F. Butler of Wilmette has left the office of County Physician of Cook County, abandoned "rampaging Peter" Bartzen to his fate, and removed to Kramer, Ind., where he becomes medical director of the Madlavia Sanitarium. Any disease entity that refuses to yield to Butler's therapeutics, Kramer's cascabels and Indiana mud should be ashamed of itself.

Drs. William T. Easley and J. C. Wilson of Greenville, recently celebrated the thirtieth anniversary of their graduation from the College of Physicians and Surgeons, St. Louis, by a banquet at the residence of Dr. Easley. These gentlemen have ever since their graduation been neighbors and friends, and time only serves to strengthen the friendly feeling existing between them.

The following physicians went on the Panama excursion: Dr. and Mrs. Archer O'Reilly, St. Louis; Dr. and Mrs. E. P. Raab, Belleville; Dr. and Mrs. Everett J. Brown, Decatur; Dr. and Mrs. H. G. Mudd, St. Louis; Dr. and Mrs. H. H. Roberts, Maywood; Dr. and Mrs. F. W. Werner, Joliet; Dr. and Mrs. S. M. Peairs, Joliet; Dr. and Mrs. C. F. Klaus, Chicago; Dr. and Mrs. C. C. Eldred, Joliet; Dr. F. J. Kolar, Chicago; Dr. E. B. Packer, Toulon; Dr. M. B. Clopton, St. Louis.

REMOVALS

Dr. J. N. Shearl from Urbana to Middletown.

Dr. F. M. Copple of Havana has removed to Paris, Cal.

Dr. Nels Hanson of Rockford has removed to Moline.

Dr. J. G. Lamb has removed from Fisher to Cerro Gordo.

Dr. P. S. Waters has removed from Brookport to Anna, Ill.

Dr. G. W. Poole has removed from Danville to Peoples Gas Building, Chicago.

Dr. H. A. Gerbig of 1750 Madison Street, Chicago, has removed to Friend, Neb.

Dr. E. W. Mosley, 1625 Western Avenue, Chicago, has removed to Lincoln, Neb.

NEW INCORPORATIONS

Marion Hospital Company, Marion, \$20,000; maintain a hospital. Incorporators, D. D. Hartwell, M.D., L. L. Fowler, M.D. and A. M. Edwards, M.D.

Chicago College of Chiropody and Pedic Surgery, Chicago, \$2,500; educational. Incorporators, Agnes C. Enlow, H. R. Enlow and N. Von Schill.

PUBLIC HEALTH

—The Litchfield Woman's Club have employed a visiting nurse to devote her entire time to the poor.

—Dr. G. T. Palmer of Springfield delivered an address on public health matters at Litchfield, Ill., February 6, under the auspices of the Litchfield Woman's Club.

—Dr. Richard Dewey of the Milwaukee Sanitarium, Wauwatosa, Wis., has secured the services of Dr. Herbert W. Powers as senior assistant physician. Dr. Dewey continues to reside at the sanitarium and in active personal charge of the medical service. Dr. Powers comes from seven years successful service at the Kenilworth Sanitarium.

—A new law has been passed in Colorado calling for state-wide notification of tuberculosis. Prominent social workers in Illinois have wired to Governor E. M. Ammons on his having signed the bill, which he did in the face of those who opposed the steps of progress in the health campaign. It is believed by these social workers that this movement in Colorado will help the cause of health throughout the country and that such laws are absolutely essential if tuberculosis is to be eradicated.

—An English-speaking Conference on the Prevention of Infant Mortality will be held in Caxton Hall, Westminster, London, on Monday morning, Monday afternoon and Tuesday morning, August 4 and 5. The meetings will be held under the auspices of the (British) National Association for the Prevention of Infant Mortality and The Welfare of Infancy under the Patronage of the King and Queen, and will convene immediately preceding the opening of the International Medical Congress.

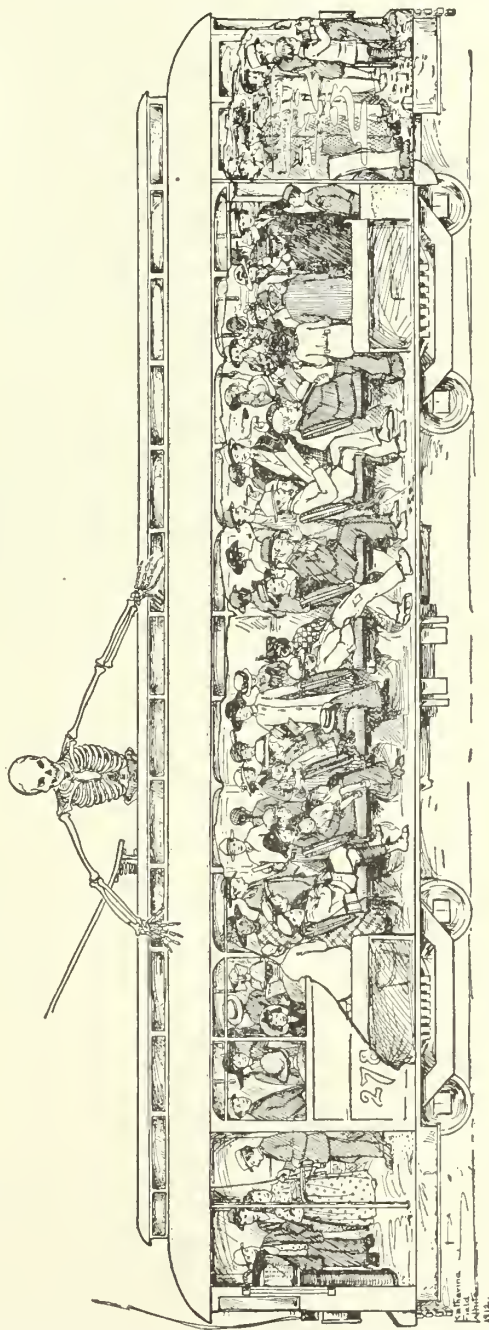
A tentative program has been issued by the committee, which indicates that the papers will consist largely of medical opinion. The subjects treated will be: "The Responsibility of Central and Local Authorities in Infant and Child Hygiene," "The Administrative Control of the Milk Supply," "The Necessity for Special Education in Infant Hygiene," "Medical Problems in Infant Nutrition" and "Ante-Natal Hygiene."

The President of the Conference will be the Hon. John Burns, M.P., President for the Local Government Board. The Chairman of the English Executive Committee is Sir Thomas Barlow, and the Secretary, Miss J. Halford, 4 Tavistock Square, London, W. C.

The American Committee, in charge of the part to be taken by the United States and Canada, will furnish information to those desiring to attend the conference. Dr. Henry L. Coit, Chairman, 277 Mt. Prospect Avenue, Newark, N. J. Dr. Philip Van Ingen, Secretary, 125 East 71st Street, New York City.

EN ROUTE - TO ILL HEALTH

THE UNVENTILATED, OVERCROWDED STREET CAR IS A POSITIVE MENACE TO HEALTH



A box full of steaming, sneezing, spitting, coughing human beings, each breathing in the other's foul exhalations. . . . Such is the ordinary city street car during "rush hours."

Many a morning's ambition, born of the freshness of the waking hour, has been stifled by the foulness of the morning's ride.

Chicago Health Department, Educational Poster No. 131

From Bulletin Chicago Department of Health.

Designed by Dr. C. St. Clair Drake

MARRIAGES

V. C. MORTON, M.D., of Rantoul, to Miss Mae Oakman of Peoria, at Chicago, March 5.

JOHN PETERS, M.D., of Maywood, to Miss Lillian Goldberg of Chicago, February 18.

DARWIN KIRBY, M.D., of Champaign, to Mrs. Julia Wilson of Chicago, at Chicago, March 1.

E. T. TEHLKA, M.D., and Miss Denna Pearson, both of Glasford, were married at Peoria, March 19.

F. M. BLOME, M.D., of Roberts, Ill., to Miss Della Rueger of Carson City, Mich., occurred at that place February 12.

DEATHS

GEORGE B. SMITH, M.D., Kansas City (Mo.) Medical College, 1880, of Brussels, Ill., died in Los Angeles, Cal., February 7; aged 60.

AMOS CLYDE STALEY (license Illinois, 1897), an experimental chemist of Chicago, died suddenly in his laboratory in that city, February 18; aged 43.

GEORGE MARK SILVERBERG, M.D., New York City, 1893; formerly of Chicago; died at his home in Los Angeles, February 22, from heart disease; aged 52.

KATE B. PETERSON, M.D., Bennett Medical College, Chicago, 1885; died at her home in Chicago, January 20, from sepsis, due to phlegmon of the leg; aged 76.

JOSEPH M. DE TRANA, M.D., Rush Medical College, 1892; of Chicago, died in the Presbyterian Hospital in that city, February 11, from hemorrhage into the pons; aged 46.

WILLIAM ADAIR JONES, M.D., died at his home in Bloomington, Feb. 28, 1913, after a lingering illness with liver trouble. The deceased was born in Union, W. Va., Aug. 8, 1843.

EDGAR W. SMALLWOOD, M.D., Jenner Medical College, Chicago, 1910; for eight years one of the staff photographers of the *Daily News*, died at his home in Chicago, February 18; aged 40.

ROBERT CHRISTIE GIBSON, M.D., University of Pennsylvania, Philadelphia, 1876; formerly of Pittsburgh, died at his home in Chicago, February 14, from cerebral hemorrhage; aged 65.

CURTIS T. FENN, M.D., Rush Medical College, Chicago, 1866; a member of the Illinois State Medical Society; died at his home in Chicago, February 21, from senile debility; aged 79.

FRANK C. MULKUP, M.D., Chicago Homeopathic College, 1898; Hahnemann Medical College, Chicago, 1905; a member of the Bohemian Medical Society of Chicago; died suddenly from heart disease at his home in Chicago, March 1; aged 42.

ALBERT P. KADISON, M.D., University of Munich, Bavaria, 1874; is said to have been the first Jewish physician in Chicago; known as "the little father of the Ghetto," active in Jewish social work; died at his home in Chicago, February 26; aged 78.

GEORGE W. TAYLOR, M.D., Syracuse Medical College, Eclectic, Rochester, N. Y., 1853; one of the oldest practitioners of Princeton, Ill.; for many years a minister of the Christian Church; died at his home January 26, from senile debility; aged 97.

JOHN HEADLAND, M.D., Physio-Medical College of Indiana, Indianapolis, 1886; a member of the American Medical Association; at one time mayor of Galva, Ill.; died at the Peoria Sulphur Springs Sanitarium, February 12, from heart disease; aged 50.

JAMES ALAN NEVILLE, M.D., George Washington University, Washington, D. C., 1910; formerly an interne at the United States Marine Hospital, Chicago; superintendent of the Iroquois Memorial Hospital, Chicago; died in that institution, February 20, from pneumonia; aged 28.

FREDERICK CHARLES EGGERT, M.D., Northwestern University, Chicago, 1898; instructor in operative surgery in his alma mater; a member of the American Medical Association; chief surgeon of the German Deaconess Hospital; died at his home in Chicago, March 6, from pneumonia; aged 37.

J. B. SHAWGO, M.D., Bennett Medical College, Chicago, 1877; of Quincy, Ill.; a member of the Illinois State Medical Society; a veteran of the Civil War; for four years an alderman of Quincy, and President of the Board of Directors of the Public Library, and for twenty years Chairman of the Board of Commissioners of the House of Correction; died in a hospital in Jacksonville, February 19; aged 69.

JOHN W. DAL, M.D., Northwestern University Medical School, Chicago, 1878; a member of the American Medical Association and Chicago Medico-Legal Society; for many years an esteemed practitioner of northwest Chicago; aged 58; died at his summer home in West Olive, Mich., February 14, from carcinoma of the tongue and throat, for which operation had been performed a year ago at Wesley Hospital.

Book Notices

DISEASES OF THE HEART AND AORTA. By Arthur Douglass Hirschfelder, M.D., Associate in Medicine Johns Hopkins University. Second edition. J. B. Lippincott Co., Philadelphia and London. Price \$6.00.

This is the second edition of this excellent treatise in less than three years, and the practitioner who has not kept in touch with the remarkable development of the literature on the diseases of the heart and aorta will be greatly surprised to find what a remarkable mass of material has been put inside the covers of

this book of more than 700 pages. It brings the subject down to date in every detail, including the later forms of the electrocardiogram and all that is known of blood-pressure, the outlining of the heart and vessels by means of the *x*-ray, and the phonographic recording of heart sounds.

Every practitioner of general medicine should have this book on his shelf and become familiar with its contents.

MUSCLE TRAINING IN THE TREATMENT OF INFANTILE PARALYSIS. By Wilhelmine G. Wright, Boston Normal School of Gymnastics, 1905. Reprinted from *The Boston Medical and Surgical Journal*, Vol. clxvii, No. 17, pp. 567-574, Oct. 24, 1912. Price Twenty-five cents. W. M. Leonard, Publisher, 101 Tremont St., Boston, Mass.

The demand for light on this subject exhausted the file of the *Journal* in which it was printed and has led Dr. R. W. Lovett and the *Medical Journal* to re-issue the article in form of a thirty-two page reprint at the nominal price of twenty-five cents. The directions given are explicit and make the reprint not only of great value, but practically the only set of definite directions in the treatment by exercise of conditions following paralysis.

NEW AND NONOFFICIAL REMEDIES.—1913.

The Council on Pharmacy and Chemistry of the American Medical Association have just issued a revised edition of this valuable work, which brings it to the practitioner down to date, and which should find a place on the desk of every active practitioner whether physician or surgeon. The price is reasonable and besides the profession is entitled to the supplement which will be sent out from time to time. Only those who have kept in touch with the publications of the council will appreciate the great work which is done right along by the National Association.

THE SURGICAL CLINICS OF DR. J. B. MURPHY OF MERCY HOSPITAL. Volume 2, No. 1, February, 1913.

This number is the first in the second volume of Dr. Murphy's Clinics, and is particularly valuable because of the thirty-two pages devoted to remarks of Mr. W. A. Lane of London on the open treatment of fractures, which is beautifully illustrated by *x*-ray photographs from his own and Dr. Murphy's collection.

Dr. W. C. Woodward, health officer of the District of Columbia, is introduced also to speak on the medicolegal relations of the physician and patient. There is also the usual number of valuable articles contributed by Dr. Murphy himself, which have served to make these publications so popular. Messrs. Saunders and Company inform us that they expect to continue the publication of these clinics indefinitely.

SOLIDIFIED CARBON DIOXID. By Ralph Bernstein, Clinical Instructor in Skin Diseases, Hahnemann Medical College, Philadelphia. Frank S. Betz Co., Publishers. Price \$1.00.

The Frank S. Betz Company, surgical instrument dealers of Hammond, Ind., and Chicago, Ill., have published this highly instructive work, which is a complete amplification of remarkable therapeutic advice first introduced by Dr. Pusey of Chicago. The subject is considered in the seven chapters covering a description of each method of preparation and application, and finally the therapeutics which embraces the treatment of nearly fifty different forms of disease.

We are confident this treatment is not sufficiently known, and believe that Dr. Bernstein's work will meet with a hearty reception.

thus dispelled the empirical beliefs regarding the effects of mineral baths, formerly considered in the practice of balneology.

We thus see that hydrotherapy and balneology are practically one and the same, and that the mineral content of waters or muds quoted to the infinitesimal point have no more, no less value than the reaction to the heat or cold used in their application, modified by pressure, friction, time or other method of technic.

Hinsdale² says: "The capacity for infinite gradation and its utmost unbounded applicability to various pathologic states justifies the claim, made with growing insistence, that the use of water commands the first place in modern therapeutics." To understand the therapeutic application of water in its very varied forms demands that we not only know anatomy and physiology, especially of the skin, the nervous system and the cardiovascular system (the heart and blood-vessels), but also, we should be familiar with the biochemistry of the body, in health and in disease. In addition, we must have a working knowledge of the physical and chemical qualities of waters to be used in hydrotherapy. Then, of course, follows the clinical consideration of the diseases to be treated, indications for treatment, contra-indications and the varied problems which modify the manner and form of using hydrotherapy.

Physical therapeutics has been a neglected part in the practice of medicine largely due to the perfunctory methods and inadequate facilities for proper teaching of this most important and valuable adjunct in treatment.

Experience, too, is necessary in order to recognize the limitations of its practice, especially in the use of hydrotherapy. Campbell³ well says: "One of the first lessons the young physician has to learn — too many never learn it at all — is the limitation set by Nature on his therapeutic measures." Hydrotherapy is a two-edged sword, and until one grasps its primal principles in treatment he had better go slow and gradually learn its potency as well as its dangers. Again, the young physician must grasp the importance of his patient as an individual, learn not only the science, but the art of medicine and thus see the workings of human nature in health and in disease. He will learn that the art of medicine is as old as time itself — but that the science of clinical medicine belongs to modern medicine. "The real physician is the one who cures; the observation which does not touch the art of healing is not that of a physician, it is that of a naturalist." As Walsh⁴ says: "Where they are indicated, balneotherapy, hydrotherapy, mechanotherapy, electrotherapy, massage, and all forms of external treatment should be used rationally and not merely conventionally. The individual and not his affection must be treated."

The water and its physical properties must be understood, as the value of water thus used is in its capability to act as an agent, a vehicle, to convey temperature impressions, which, as before stated, are the essen-

2. Hinsdale: *Hydrotherapy*, W. B. Saunders Co., 1910.

3. Campbell on *Treatment*, Wm. Wood & Co., 1907.

4. Walsh, *Psychotherapy*, Appleton, 1911.

tial elements in hydrotherapeutic practice. Baruch⁵ has briefly stated the physical properties of water as follows: "Water possesses a remarkable capacity for absorbing heat without being itself much elevated, and giving off heat without losing itself very materially in temperature."

The quantity of heat required to raise the temperature of 1 pound of water 34 degrees suffices to elevate to the same temperature 2 pounds of oil of turpentine, 8 pounds of iron or 35 pounds of mercury. The temperature-conducting capacity of water is twenty-seven times greater than that of air. Water conveys to the skin much stronger thermic impressions than does air at the same temperature, a fact easily discovered in exchanging a room temperature at 75 degrees for a tub at the same temperature. The enormous physical changes which water is capable of accepting as the result of different temperatures enhances its value as a flexible thermic agent. In the form of ice, steam vapor, etc., it evolves thermic values which are impossible in other conveying agencies.

To secure the value of water in any form in practice we need but to devise mechanical contrivances which will afford the uses to which we wish to apply it. Precise, controllable and efficient mechanical devices make it possible to regulate the time, method and form of application, and thus an enormous range of effect in usage is obtained. Safety should be the watchword, and while mechanical means insure this within the range of ordinary possibilities, if guided by the trained and experienced mind of man, yet, the dangers should be understood and no device depended on without intelligent supervision. We are dealing with such a flexible therapeutic agent that we must ever keep in mind the fact that it requires brains as well as mechanical devices and hands to use it. The perfect control which the chief physical property — namely, its fluidity — affords in regulating not only its temperature, but the size, form and character of the stream, enables it to be directed to any part of the body for local or general effects. Then, again, the capacity of water to respond to various degrees of pressure endows it with power to produce mechanical effects on the nerve- and blood-supply of the skin, which forms one of the most interesting and least appreciated elements of hydrotherapy. It requires demonstration to some to prove this last statement, but in the practice of nervous and mental diseases this one feature alone is one of the most valuable therapeutic agents we have in treatment.

Here, again, skill and supervision and a well-regulated mechanical device, become essential to successful practice. The possibilities of irritations and even destruction of tissues from misapplied hot water under pressure are facts to be always kept in mind.

Cold and heat are, from the standpoint of physics, two representations of the same caloric force. All warm-blooded animals depend on the regulation of so-called animal heat in order that they may maintain health. Man has a normal constant body temperature, 98.6 F., which temperature is maintained automatically through two distinct mechanisms, one for heat generation, the other for heat elimination. One is

5. Baruch, Hydrotherapy, Wm. Wood Co., 1908.

physical, the other chemical in action: both are correlated in action through the nervous system.

Physical regulation is controlled by the skin through the action of the nervous system. Cold, in its caloric action, abstracts heat and in this reaction causes contraction of blood-vessels. This contraction inhibits the loss of heat by radiation. If cold is applied for only a short time, on its withdrawal we note the "reaction," which is a hyperemic state, caused by dilatation of vessels, increased heat loss, etc.; a redness or glow of the skin follows.

Experimental research has shown that the physiologic reaction of the body occurs in the application of both cold and heat. It is this reaction which is sought in the practice of "hydrotherapy." We all know from experience in the bath, and especially as boys in the "old swimming hole," how cold water affects the body. On entering the water there is shivering and apparently intense cold, especially when the water touches the abdomen and chest. In a moment, however, reaction occurs—a sense of warmth follows, the pulse is increased in force, respirations, first shallow, become deep and a sense of well being follows. This is "normal reaction"—the stage of exhilaration, but we also know that if we stay in too long a depression follows, the lips become blue, fatigue of the body occurs and the danger of cramps follows. If one leaves the bath during the stage of exhilaration the sense of well being may last all day. This is the tonic effect sought.

The physical explanation of the foregoing effects is as follows:⁶ First, the rapid abstraction of heat from the body by water colder than body temperature lowers body temperature, the heat not being generated fast enough by calorification centers for maintenance of body temperature equilibrium. To conserve what heat is in the body and to prevent evaporation through the skin—the skin blood-vessels contract, sending the blood to the warm recesses of the body, leaving the skin surface cold. This causes, through the nervous system, a recognition of the fact that more blood is needed to produce heat, more exertion of the heart is necessary to propel the blood and the blood must be forced to the surface as a defense reaction, hence heat production is increased, blood is forced to the center and under stimulus of the heat from within new metabolic exertions, increased stimulation of heart and blood-vessels, the reaction occurs. Thus is the tonic effect of the cold bath evolved.

If the bath is prolonged, overstimulation, with fatigue, abnormal fatigue, abnormal metabolic disturbances, toxic in type, results and the nervous system suffers. Functional activities are inhibited and undue relaxation occurs.

The rapidity and degree of reaction to cold is an individual problem, thus emphasizing how necessary it is to have knowledge not only of the technic of hydrotherapy, but of individuals as well.

Winternitz generalized some of his experiences regarding reactions as follows: "The secondary warming of a body is the surest sign and most marked symptom of reaction. The reaction is greater within

6. Hare: Therapeutics, Lea & Febiger, 1912.

moderate bounds, the lower the temperature; the greater the fall, so much greater will be the temperature of the reaction. The long continued and gradual heat abstraction is followed by slow reaction. The best reactions with least heat loss are obtained by cold applications of short duration. The degree of body heat before application of cold influences reactive temperature increase. If the body is very warm it will react more strongly to cold. The application of heat before the cooling procedure increases the intensity of reaction. A combination of cold with mechanical stimuli (massage) increases reaction. Reactions in general are dependent on the thermic stimulus of the nerves."

Baruch has shown that reaction is due to the stimulation of the peripheral sensory nerves, which in turn convey these impressions to some portions of the central nervous system and changes in local innervation result, according to which ganglionic centers receive these irritations. Head has worked out the localization of the peripheral sensory nerves with reference to referred regions, so-called zones, which are of diagnostic value and of service in treatment in working out the thermic and mechanical reactions necessary to secure desired local therapeutic results. These zones are one of the newer aids to diagnosis and treatment.

Modern hydrotherapy in the rationale of its therapeutic value considers all such aids not only in diagnosis, but in the selection of the form and manner of applying water. We have noted the effects of cold in producing reactions, now let us consider heat and its therapeutic application.

Heat is used locally and has a reaction distinctly its own. There is no systematic reaction as in the application of cold. There is an increase of internal temperature and an attempt by the bodily organism to strike an equilibrium as accumulated heat must be radiated or danger to the nervous system results, producing first, heat exhaustion, and in a more intensified form of accumulation, heat-stroke, commonly called sun-stroke. The application of heat to the skin through the medium of water, steam or vapor, without an opportunity for heat radiation, causes a rise of body temperature of from one-half a degree to three degrees, and when inhibitory action of thermic centers results, then exhaustion follows, and body temperature may reach 105, 107, 108 degrees F., or more. The hot bath, hot pack, may become a source of danger unless carefully watched, because of the fact that radiation cannot take place and heat accumulates in the body with disastrous results.

Heat is best used in the form of warm baths, or warm packs. Warm baths increase the circulation of the skin, by withdrawing blood from the viscera, increase the elimination of CO_2 —increase nitrogenous metabolism, increase the pulse-rate, but lessen the respiratory activity. The prolonged action of warm bath or pack is sedative to the nervous system, lessening nervous excitement, lessening pain and producing a general feeling of languor. The warm bath used as continuous bath in mental disorders at a temperature from 70 to 90 degrees F., has a sedative, hypnotic effect. Its use has now become quite general in hospitals for

the insane in treatment of manic and delirious phases of mental disorders.

The wet pack (sedative pack), however, is superior to the warm bath in producing the calmative and sleep effects desired in mental and nervous diseases, even where excitement is a feature. The tonic, sedative and revulsive reactions of water through its use as a vehicle in thermic bearing properties are due, as physiology has taught, primarily to the blood circulating through the tissues of the body; the direct or indirect results being due to the ratio of arterial blood circulating in the tissues affected. Vascular activity is therefore important — it is the equalizer, because accumulated heat in organisms or tissues is balanced by the streams of blood circulating in them.

Hydrotherapy utilizes these physiologic processes in reducing or elevating temperature in the body, in stimulating the nervous system and in promoting excretory and secretory functions of organs. We must get away from the idea that temperature equalization is the sole object of hydrotherapy—this is only one of the objects. We seek to stimulate through thermic influences the activities of organs and tissues in order that they may carry on their true physiologic duties. The reactions which rehabilitate excretory functions, which reestablish metabolic functions, which give good, clean, new blood to tissues, are what we seek.

The clinical side of hydrotherapy requires familiarity with the body at work, both in health and in disease, and a rather profound knowledge of diagnosis which includes most all disorders coming within the range of internal medicine and in the special field of nervous and mental disorders. We must know when not to use hydrotherapy as well as when to use it. Many of the mistakes, disasters, of which I have known many, were errors of omission rather than commission in diagnosis.

The practice of hydrotherapy requires one to be familiar with the physical properties of water; skill in the manipulation of the apparatus used and an intelligent interpretation of prescriptions given by the physicians. Baths for remedial purposes require rooms and apparatus specially designed. The equipment may vary from a simple outfit sufficient to meet all requirements to a most elaborate and expensive outfit with all appurtenances which appeal to the eye rather than to utilitarian values. As engineers and local managers of water-supplies, I dare say, sooner or later with the advancing needs of modern hospital equipment, you will encounter the problem of designing the room and installing hydrotherapeutic apparatus. For this reason I beg to briefly review some of the needs of an efficient serviceable outfit and give you some of the don'ts which experience in an extensive use of hydrotherapy in our state hospitals has emphasized.

The various concerns manufacturing bath equipments have vied with each other in designing apparatus so that you have at your call the services of any one of these concerns in aiding you in the selection of an outfit up-to-date in efficiency and service. The room necessary to install the equipment, practical and of sufficient size to meet the varied usages of hydrotherapy, must be at least 16x20 feet, preferably situated on the

ground floor with water-proofed walls and floors, the floors to slope so that adequate drainage can be insured. It must be well ventilated and have proper lighting effects. The apparatus to be installed and required should consist of a stationary bath tub, specially designed; that is, it should be longer and wider than the ordinary bath tub. It should have a large intake properly connected for hot and cold water, with a control table or mixing chamber; it should have a large discharge waste, with overflow. There should be in this douche-room a shower-bath, also properly connected for hot and cold water with the controller table. The shower should contain all sprays necessary to give both general and local spray treatments. There should be a sitz bath tub, a perineal spray — both of which to be connected for hot and cold water with the controller table. There should be a shampoo table, properly equipped. The controller table is a most essential part of the equipment, and should include all the connections before mentioned, and in addition, Scotch douche equipment with regulators for water pressure control, pressure gauge, thermometers which will work and with supply pipes large enough to meet all demands. The valves of the controller table need to be watched, as leaks, especially from the hot water intake, may cause serious harm if not carefully watched. The valves should be cleaned from time to time, to remove scale, and should be reground from time to time in their seats to remove all erosive effects on the valves. This is a practical fact overlooked not infrequently. As a result, a valve with a small leak may, under continuous pressure with water charged with rather high mineral content, soon cause an erosion which causes the dangerous leak. Only experienced operators should be allowed to operate the controller table. Adjacent to the douche-room there should be a room where packs may be administered and where the electric full-bath cabinet may be operated. This apparatus is a necessary adjunct and will displace the expensive Turkish bath equipment. An improvised Russian vapor bath can be installed at small cost, displacing the expensive Russian steam bath equipment.

With such an equipment just outlined all of the modern therapeutic indications for hydrotherapy can be met. Now as to the don'ts in installing such an apparatus. First, do not install it on the floors above the first. (Preferably, such an outfit should go in a sub-basement room.) In spite of the care in building a douche-room on the first or second floors or higher up, leaks will occur in the floors or in the walls, or a broken pipe will flood adjacent territory and cause trouble. Again, the steam vapors, etc., in spite of door and window arrangements, conspire to create trouble in adjacent rooms, etc. A quiet, retired part of an institution best meets the indications in servicable location. The ice-boxes, too, needed to regulate the coldness of water and to keep the supply of ice needed in packs, are best served when their location is such that they can be filled in wagon-load lots. The water-supply necessary for hydrotherapy, as before stated, must be hygienic; free from mud, debris, and should not be foul in odor. It should be unlimited in quantity. Continuous baths may be arranged in series, controlled at one table, or each

tub may have its mixing chamber. Continuous baths should be given in a separate room adjacent to the receiving wards.

The applications of hydrotherapy with an equipment and water-supply just mentioned cover a wide range. The manner and form of application of hydrotherapy is a medical problem in which should be considered, primarily, the contra-indications to hydrotherapy. It is too late to consider contra-indications after the damage is done. Forewarned is forearmed. Hence the necessity of a thorough physical examination of the patient before hydrotherapy is used. Acute, subacute and chronic disorders of the heart, including aneurysm of the blood-vessels, require great circumspection and a nicety in technic which only the most experienced therapist can determine. Routine examinations should be thorough—blood-pressure watched and every care used to note reactions out of proportion to the stimulus applied. It is better not to resort to baths under ordinary conditions in heart diseases, and packs need constant oversight. I have seen ordinary cleansing baths prove fatal in such cases. In the use of Nauheim baths in heart lesions a special technic is to be followed and great care here is absolutely necessary. The blood-pressure apparatus and clinical thermometer, are indispensable in observing reactions in hydrotherapy practice. Clinical charts in such cases should be carefully kept. In certain lesions of the kidneys, in certain brain lesions and metabolic disorders, caution is needed in estimating the dangers to be encountered.

The wide range of value in the use of hydrotherapy in acute and chronic disorders in general, and in nervous and mental disorders in particular, are best estimated by experience and careful study of the literature on the subject. The beneficial results in the treatment of typhoid fever by the Brand method has placed a high value on hydrotherapy and developed newer phases in medical practice, and especially in education of nurses in this field of practice. The treatment of acute infectious diseases has been greatly advanced by the application of hydrotherapy. The greatest value perhaps has been in the practice of nervous and mental diseases, especially the latter.

Hydrotherapy is the most valuable and most generally available means of practice now in vogue. The effects noticed are sedative, tonic and eliminative. The sedative effects are secured through the application of the warm bath, the pack, the continuous or prolonged bath. Insomnia, restlessness, excitement, manic phases, etc., are the indications for the use of sedative treatment. Tonic effects are secured through the cold pack for fifteen minutes followed by the douche, massage, etc. These measures are indicated in depressed states, in dementia praecox cases, certain phases of paresis. Elimination is obtained through the revulsive pack, the electric bath, the Turkish bath, etc., followed by douche, etc. These baths are taken daily and for a sufficient length of time to get results. An exact technical consideration of indications is necessary first as to form of bath, the manner of giving and clinical detail to be observed in each case.

There are many physicians, including some hospital managing officers even in Illinois, who do not appreciate the value of hydrotherapy, and who look on the apparatus and routine of practice as "fuss and feathers" — the apparatus as an "expensive toy" — and all because of ignorance, the lack of definite information and a tendency to cling to old idols. The treatment of mental disease has, through hydrotherapy, been revolutionized, the burdens of responsibility in treatment lessened by providing more precise, more scientific, more reliable methods of securing the three great indications in such treatment, viz., sedative, tonic and eliminative results without the undesirable results not infrequent in the train of certain drugs which are used to secure sedation, etc.

Illinois proposes to train her own operatives in hydrotherapy. We have decided to have a training station at Kankakee where a graduate in physical therapeutics will teach the practical technic and where physicians familiar with the principles and practice of hydrotherapy will conduct the class work.

General hospitals, private sanatoriums and even physicians' offices should have at hand the facilities to meet the indications for hydrotherapeutics as we now see them to-day. Every community of at least ten thousand inhabitants should have a complete equipment, which could be conducted as a private hydropathic institute, to which patients could be sent for treatment. Water companies could cooperate to make such an institute a credit not only to the community, but to the company and all who would cooperate in making water as a therapeutic agent available and serviceable to that community.

THE STERILIZATION OF THE INSANE, CRIMINAL AND DELINQUENT *

H. DOUGLAS SINGER, M.D., M.R.C.P.

Director of the Illinois State Psychopathic Institute

KANKAKEE, ILL.

In venturing to appear before you to discuss this important topic, I feel that I owe you some apology. I have had but little time for the preparation of this paper and have also had but little opportunity for the collection of any properly digested facts or statistics. Nevertheless, the subject is one of such interest to me personally and has been so much emphasized as a highly desirable measure that I felt it my duty as well as pleasure to accept your kind invitation. From this remark you will gather that I am not in favor of the measure under discussion. This has added to the difficulty of the preparation of this paper for the reason that I am not informed of the exact measure which is being supported before you. My remarks are based on the law enacted in Indiana which has been the foundation of most of the legislation on this question.

*Read before the North Side Physicians Club, Jan. 28, 1913, at the Germania Club House.

This act is entitled, "An act to prevent procreation of confirmed criminals, idiots, imbeciles and rapists," and was approved in March, 1907. It provided for the compulsory sterilization of these classes of individuals and enunciated certain very necessary safeguards to its practical application, among which I would especially emphasize the following: "But this operation shall not be performed except in cases that have been pronounced unimprovable."

My own work on this topic necessarily deals more especially with the insane, but I would like to insist that to a very large extent the stock is the same as that which provides the feeble-minded, the criminal and the delinquent. The more one studies the insanities the more one appreciates that the occurrence of a mental disorder which we call insanity is in greater or less degree dependent on some inherent defect in make-up. The harmonious adaptation of the organism as a whole to the conditions of life is the especial function of the nervous system, and we must include under this term, conditions of life, not only the happenings in our surroundings, but also the state of our own bodies. Adjustments have to be made to meet sickness of, and accident to, our bodies, and in the complex conditions in which we live and strive to obtain the fulfilment of our natural instincts and desires, it is obvious that the highest brain activities which represent what we call our mental life, must be involved to a greater or less extent. The presence of an infective disease of the body makes demands on the mental mechanisms of the brain as well as on the more vegetative functions of the tissues, leukocytes, etc. We know for a fact that certain individuals are more liable to suffer from delirium as the result of such infective disease than others, and this must be due to the particular construction of the nervous system with which these persons are endowed. Such deliria may therefore well be regarded as evidence of more or less instability. It has long been recognized that even a poison like alcohol, is to some extent a test to stability; that the defective and unstable are less able to withstand the effects of alcohol than the more robust. Obviously there must be a limit to every individual's power of endurance and adjustment to intoxication, and it is probably true that a severe infection may result in delirium in the strongest and best developed man. The same may be said even of the insanities accompanying many of the more definitely organic diseases of the nervous system, such for instance, as general paralysis of the insane, in which there is unquestionably something in the make-up of the individual which permits this development as the result of infection with syphilis.

Such inadequacies in make-up are generally admitted in the etiology of those insanities which we call functional or constitutional, and these form the large majority of all cases of so-called insanity. I am at once prepared to urge and admit the importance of heredity as a very large factor in the causation of such defects. Even where faulty environment and education seem to play an important part it is probable that a defective soil is also present.

It is perhaps unnecessary to quote statistics concerning the influence of heredity in the causation of insanity, but I may give you some figures

on two of the most important types of mental disorder which we meet commonly. According to Kraepelin, defective heredity is present in 80 per cent. of all cases of 'manic depressive psychosis. This, in my experience, is not an overstatement of the facts. In dementia praecox, Kraepelin gives 75 per cent., while Wolfsohn places it at 90 per cent. In a very small number of healthy individuals, Diem found that 65 per cent. showed defective heredity when investigated in the same manner. The fact of defective heredity, therefore, cannot be questioned. The value of these statistics for our purpose, however, is very small, for we do not know the proportion in which this defect was present in the immediate parents of the patient. According to Bleuler, insanity is present in the parents or grandparents of his dementia praecox patients in 35 per cent. (Kraepelin gives 18 to 19 per cent.), but unfortunately does not show what percentage of these were committed for this insanity. Even did we know what proportion were committed, the figures would be still of small value to us in relation to the question of sterilization, for we would still require to know how many of these were certifiably and unimprovably insane prior to the birth of the patient in question.

I have here some charts showing the heredity of cases of various types of insanity which have been under my observation. I would say that these charts have been taken at random from those in my possession and have not been specially selected for the purpose of this argument. From these charts it can readily be seen that heredity is a very important factor and I would especially call your attention to the fact that in not one instance has any parent or grandparent been under conditions in which he or she would have been affected by the operation of any law providing for sterilization prior to the birth of the patient. It is true that there are examples in which parents have actually been committed as insane and even unrecoverably insane, but the patient in each instance has been born before the parent came under observation.

If we consider the effect of such a law on these two types of mental disorder somewhat further we find certain other features which also tend to minimize its value. The patient suffering from dementia praecox is, with very few exceptions of doubtful meaning, not going to recover. He is, therefore, a candidate for sterilization under the Indiana law. But, and this is the crux of the whole question, he is also never going to be restored to the full rights of citizenship. I can give you no figures concerning the following statement, but, nevertheless, it is one which I believe to be very largely true: The number of children born to persons suffering from dementia praecox, after the recognition of the disorder has once required their commitment as insane, is an entirely negligible quantity. The majority of them remain within the walls of a hospital for the insane. Those who are permitted to return home only do so when conditions are such that close supervision is possible.

On the other hand, the individual suffering from a manic depressive psychosis nearly always recovers from the attack. The majority of them return to their homes, even if only for a short time. These persons are, therefore, not amenable to the law of sterilization, although the chances

of their procreation are far greater than with the dementia praecox patient. All physicians in insane hospitals know instances where children have been born to such parents. Yet the strain derived from a manic depressive constitution is fully as dangerous to posterity, if not more so, than that of the dementia praecox. If the law could be made applicable to these persons I would gladly endorse it. But it must be remembered that this means that you are dealing with an individual whose health in all probability will be fully restored and who may never have another attack of mental disorder. I shall be greatly interested to hear from Mr. O'Donnell whether such a law would be possible. This particular class of cases seems to me to be the only one in which such measures would be desirable, and yet the one in which they would be most difficult to enforce.

With regard to the feeble-minded and delinquent I am unfortunately unable to give you any widely extended personal study. I might, however, call your attention to the fact that there are examples of such individuals in the family trees already presented to you. For some, at any rate, the same arguments prevail, and it would seem that the enforcement of the Indiana law would not have prevented the birth of any of the cases in question. This problem has long impressed me as a very important one for actual investigation in a large series of cases, but I have been unable to do this myself. I have questioned the medical officers of the School for the Feeble-Minded at Lincoln, and while I realize that one has no right to draw any conclusions from such statements, I present the answers to you because they seem to me to be very near the truth. I am assured that very few, if any, of the children admitted to that institution are descended from parents who have at any time been under the care of the state. My informants are careful to add that there is no doubt that the parents are in a very large number of instances more or less feeble-minded. This we may accept without demur, but for this law to have effect on them it is necessary that they be definitely unable to care for themselves. It therefore seems to me that even with regard to these children sterilization would have no effect under the present method of social organization.

We are then told that sometimes these children leave the institution. This is not a fact which would require the passage of a sterilization law. The obvious remedy is not to allow them to leave. Sterilization does not make them any better fitted to live in society; in fact, it brings with it certain other dangers to which I shall return later.

If we now turn to the criminal, and by this is meant the habitual criminal, the state of affairs is practically the same. Such individuals belong to the same group as those figuring in our charts as constitutionally inferior individuals and are just as much mentally defectives as the feeble-minded or the insane. I can give you no other figures concerning the heredity in these cases than those illustrated. If such individuals are capable of recovery the inherited defect is not great, and they are not subject to the Indiana law. If they are not capable of

recovery they are not fit to return to social life and would not be rendered any more so by having been sterilized.

The strength of the appeal which is made by the supporters of this measure lies in the presentation of the facts of defective heredity. We all recognize the truth of these assertions and the fact that some remedy is urgently needed. In my argument thus far I have tried to point out the futility of such a measure as that of sterilization. We are carefully reassured as to the absence of danger or harm to the person operated on. But nowhere have I seen or heard any statement as to the fact that this or that degenerate individual would not have been born if this law had been in force. Of all the charts which I have had the opportunity to study I have never yet seen one in which it is shown that this result would have been achieved.

Are there, however, no arguments which can be urged in direct opposition to such a proceeding? The sentimental side of it does not in any way appeal to me, although it has been strongly urged by some. I would willingly endorse the measure if it could be shown that any good, commensurate with the seriousness of the remedy, were in sight.

There is one argument against this measure which appeals strongly to me. You might, conceivably, prevent the birth of some few degenerate individuals by sterilizing a delinquent girl, but what of her ability to spread syphilis broadcast, to lay the foundation of degeneracy in numbers of approximately healthy stocks? The operation of salpingotomy does not prevent prostitution. It removes the risk of bearing children, and may thus remove one deterrent to promiscuous intercourse. Let me quote you a case which well illustrates my meaning. A delinquent girl of bad heredity had been committed to one of our state hospitals more than once because of the outburst of periods of excitement from which she rapidly recovered. Her life, the details of which she gave without shame or hesitation, had been one of the most degraded to the story of which I have ever listened. She had borne two illegitimate children and had had some abortions as well. Her relatives are comparatively well to do and had her committed to avoid the consequent public disgrace and the need to provide for the care of these children. Discharge from the hospital was refused by the authorities, but finally she was permitted to leave on condition that she be sterilized. This was done and the girl has gone once more to lead an immoral life. She has, to my knowledge, been infected with syphilis, and as she is endowed with very considerable beauty of face and form, she is most probably spreading venereal disease widely. Her relatives are spared the disgrace of illegitimate children in the family, the state the need for taking care of her. But think what this means to posterity. From any metropolitan area such as Chicago, the general paralytics number at least 15 per cent. of all forms of insanity. All these are due to syphilis. The children of paralytics show all kinds of degenerate traits which they will transmit to their offspring. Epilepsy, alcoholism, dementia praecox, criminalism, vagabondage, all occur in such families. This menace is no imaginary one, it is a condition and not a theory.

At the first glance one is strongly attracted to this comparatively simple and more or less harmless looking remedy. The heredity charts of such examples as that of the celebrated Jukes family are appalling. If the wished-for results could be thus easily accomplished who would hesitate when acquainted with the facts? But it seems to me that the proceeding is not only futile, but positively harmful. One gathers from reading the arguments favoring it that it is assumed that when sterilized these individuals can be safely set at liberty. But will it cause the unimprovable criminal or delinquent to cease from his or her evil ways? If so, let us hasten to sterilize them all and abolish our penitentiaries and reform schools. The unimprovable criminal, the hopeless delinquent and the incurable insane must always be kept under supervision, not only for the good of society, but for their own protection. This is a duty of the state and cannot be avoided whether the unfortunates are sterilized or not. And do not forget the dangers which come from prostitution which is the almost constant concomitant of delinquency and crime.

Much energy has been spent in trying to force this measure through this and other state legislatures. If the law is passed and fails, as fail it must, legislators are going to look askance at such social measures for dealing with the problems of eugenics. Even before it is put on trial, the existence of such a law is liable to give a false sense of security and inhibit the securing of really effective means for dealing with these difficult problems.

In concluding, I would emphasize the fact that my opposition to this legislation is not based on an objection to the operation of vasectomy or salpingotomy itself. I am prepared to recommend its use in properly selected cases, in which I believe it could almost always be carried out with the patient's full and willing consent. I do oppose it on the grounds that it will accomplish nothing and may lead to actually increased dangers.

WHEN IS OPERATIVE TREATMENT INDICATED IN CHRONIC DYSPEPSIA? *

WILLIAM H. WATHEN, A.M., M.D., LL.D.

Professor of Abdominal Surgery, University of Louisville; Surgeon to St. Anthony's
Hospital

LOUISVILLE, KY.

The stomach has been unjustly accused of more pathologic sins, and has received more unnecessary treatment than any other organ of equal size and importance. Nearly all of these transgressions are included under the general term "dyspepsia," about which much has been written and but little known until recently, when the pathology of the organs in the abdominal cavity has been correctly studied by direct inspection in the work of the abdominal surgeon.

We find in our best text-books on medicine beautifully written chapters on the classification, etiology, symptomatology, diagnosis and

* Read by invitation before the Chicago Medical Society, Jan. 29, 1913.

treatment of chronic dyspepsia, some of which have been copied and handed down for generations. These descriptions are full of errors as we now know from the study of the pathology of the living. The diagnosis was based mainly on theory and fancy, and was seldom correct; hence the treatment was empiric, and in the newer light of to-day is seen to have been often harmful. Unfortunately some of our best men who confine their work to the medical treatment of diseases of the stomach and intestines have not availed themselves of all the wisdom to be gained in the surgical arena by direct inspection of the diseased organs in the abdominal and pelvic cavities. The text-books on medicine tell us about acid gastritis, acid dyspepsia, hyperchlorhydria, flatulent dyspepsia and nervous dyspepsia as entities, when in truth most of these conditions are caused by gall-stones, appendicitis, peritoneal adhesions, pelvic infection, ileocolitis, intestinal tumors, etc., and the stomach is trying to tell us about a pathologic condition somewhere else that is giving it trouble.

The term "functional dyspepsia" should be eliminated from medical nomenclature, for if this disease ever exists it is so infrequent as to be practically negligible, and hyperchlorhydria is only a symptom, an increase in the secretion of hydrochloric acid, usually with no structural lesion of the stomach. Like the digestive enzymes, the secretion of hydrochloric acid may be increased or diminished by a change in diet and in other ways, as shown by Starling and Pawlow.

The effort to construct a pathology on chemical analyses of the stomach secretions has been a total failure, for practically the same chemical findings may obtain in several distinctly different diseases that cause the stomach trouble. The test-meal alone is of little value as an aid to diagnosis in either ulcer or cancer, and if we delay in the latter to confirm the diagnosis by this means, the disease will then have progressed so far that surgery can offer no relief. The presence of lactic acid, food remnants, blood, low acidity, and the Boas-Oppler bacillus, and the absence of free hydrochloric acid may be found in some cases of latent calloused ulcer and reflex pylorospasm, and are in no sense pathognomonic of cancer. In cancer there may be a normal or even a high acidity, and this is especially true when the pyloric end of the stomach is not involved. In such cases cancer may stimulate the pyloric glands to a more active secretion of acid.

While I do not deny that there is value in stomach analysis, it must always be subordinate to the clinical history and the physical examination. It is only an additional aid in diagnosis. Stomach analysis in chronic gastric and duodenal ulcer is of far less value in diagnosis than in stomach motility, which can be more correctly observed and more intelligently interpreted. The x-ray has been of much value in this particular in showing the motility in impaired stomach drainage.

Let me make a more definite classification of the causes of chronic dyspepsia, that we may have a more intelligent conception of the treatment best adapted to the cure of the trouble in the stomach, or to the removal or modification of the condition in some other part of the body

to which the stomach is trying to direct our attention in a language of its own, much of which may now be correctly interpreted:

1. In 90 per cent. of cases of chronic dyspepsia there is no pathologic lesion in the stomach, and the conditions requiring operation in the entire gastro-intestinal tract, and all structures in the abdominal and pelvic cavities do not exceed 30 per cent.

2. In about 30 per cent. the stomach trouble is caused by cardiac and kidney insufficiency, tuberculosis, arteriosclerosis, tabes dorsalis, etc.

3. Another 30 per cent. is caused by congenital or acquired defects in the viscera of the abdominal and pelvic cavities, plus gastro-intestinal neuroses—gastroptosis, enteroptosis, atonic dilatation of the stomach, etc.

Stomach complaint is the most common manifestation in neurasthenia, especially inborn neurasthenia. It has been said that the abdominal surgeon has invaded the territory of the physician and has encroached on his field, but this is not true. The same was said when the surgeon began curing appendicitis by removing the appendix, but no one will make that contention now, and those who are best able to judge know that medicine does not cure appendicitis, and that purgation in every case of acute appendicitis is positively contra-indicated. It quickly increases peristalsis of the lower ileum, appendix and cecum, fills this part of the bowel with liquid, with a great increase in the number and virulence of the bacteria, all of which is positively harmful, and is often the cause of perforation or gangrene of an appendix which might have caused no immediate harm had it been left at rest.

I do not remember to have operated for several years in a single case of perforated or gangrenous appendix until after the patient had been given a purgative. There can be no conflict between the well-trained and honest physician and surgeon, as both are striving to accomplish the same end — to cure the patient. The duties of one do not always cease where the duties of the other begin, but there is necessarily often an interlacing to give the patient the full benefit of the knowledge of both. Far better would it be for all concerned if the physician would follow his abdominal cases into the operating-room and study with the surgeon the pathology of the living. He and the surgeon might then have a more intelligent agreement about the diagnosis and treatment of the case.

It is probably true that some of the best-known men in internal medicine, men who contribute much to medical literature, have seldom or never seen an abdominal operation in a living person. This necessity for studying by direct inspection the pathologic condition in the abdominal cavity that causes the stomach to complain is no less necessary in the study of all diseases in the abdominal cavity that have no stomach manifestations. Since this has been done the traditional fads and fancies in the diagnosis of these diseases are passing away like the snow when the warm rays of the sun shine on it. Pelvic cellulitis is now suppurative salpingitis; pelvic intraligamentary hematocele is now ruptured extra-uterine pregnancy; idiopathic peritonitis in the right middle quadrant and perityphilitis are now appendicitis.

We were told that tuberculosis of the bladder was always primary and that tuberculosis of the kidney was usually an ascending infection, and secondary to the bladder involvement. We now know that practically 100 per cent. of bladder tuberculosis in women is secondary to kidney involvement: the same is true of 85 per cent. in men, the other 15 per cent. being secondary to tuberculous involvement of the epididymis, vas deferens, seminal vesicles and the prostate.

We were told that chronic ulcer in the stomach was usually multiple and ten times more frequent than chronic ulcer in the duodenum. We now know that chronic ulcer in the stomach is multiple in about 6 per cent. of cases and that we have one ulcer in the stomach to three in the duodenum.

We were told that the ingestion of food in chronic ulcer of the stomach and duodenum caused pain and symptoms in the stomach immediately or soon after eating. We now know that it seldom or never does so, except in old cases in which there is obstructed stomach drainage. In stomach ulcer food relieves pain for from one-half to one and a half hours, and in duodenal ulcer it relieves pain from one to three hours. This is so conspicuously true that a patient with ulcer in the stomach or duodenum will put bread in his pocket when he leaves his home or goes to his bedroom at night, to eat when pain returns.

We were told that gastric and duodenal ulcers were more frequent in women. We now know that about 75 per cent. of these ulcers are in men and about 25 per cent. in women.

We were told that in 90 per cent. of the cases gall-stones cause no symptoms, and that the gall-stones are innocent. We now know that there are symptoms in nearly every case of gall-stones and that gall-stones may at any time cause serious infections and secondary complications.

It will thus be seen that the surgeon who has built a new pathology based on direct inspection of the pathology of the living was often compelled to "tear down and reconstruct; he used the sledge-hammer and the crowbar as well as the trowel and the plumb-line." While the bladder could be directly inspected through the cystoscope and the ureters and the secretion of the kidneys by the ureteral catheter, and stone in the kidneys and bladder by the x-ray, no such record could be achieved by the gastroscope, and the x-ray had not been of much value except in inspecting stomach motility. It was therefore necessary to inspect the stomach and other abdominal viscera through an abdominal incision.

It was the gynecologist who made possible these great achievements by demonstrating in the surgery of the uterus and its adnexa that the peritoneum is tolerant to much manipulation when treated with reasonable respect, and by avoiding rough handling and the introduction of septic matter. The surgeon then began his invasions of the middle and upper regions of the abdomen, and must be given full credit for what he has done. In the investigative work of the abdominal and pelvic surgeon he has made the peritoneal cavity a research laboratory, and has given us the pathology of the living at a time when life may be saved by timely surgical intervention.

We must also give due credit to the excellence of the work done in the research laboratories in physiology, physiologic chemistry, bacteriology, etc., from the study of which so much has been learned of inestimable value to the surgeon and the physician in their treatment of all gastro-intestinal diseases, and all diseases of the intra-abdominal viscera. Cannon, Pawlow, Starling, Herter and many other research workers in the physiology of digestion and the motility and bacteriology of the gastro-intestinal tract have given us a practical conception of much that is necessary to a correct understanding of the pathology and the treatment of the diseases of the stomach and the intestines. The names of these men will live in history when the work of the surgeon will have been forgotten.

Before post-mortem investigation the practice of medicine was empiric and the diagnosis and the treatment of all internal and hidden diseases in the abdomen was based on fads and fancy. While the study of pathology in the dead was the beginning of the scientific study of disease, it led to pessimism, for it dealt only with end-results and showed conditions that did not exist at a time when the disease could have been cured. "But few people with chronic disease die of the disease with which they suffered during life"; most die of terminal infections or secondary complications.

The cellular pathology of Virchow was another scientific advance, but as it mainly dealt with end-results it was for the time being of but little practical use in curing disease.

It may thus be easily understood that in diseases of structures in the abdominal cavity we can build up no correct pathology at a time when the patient may be cured, unless it be based on direct inspection, through an abdominal incision, of pathologic conditions in the living.

The 30 per cent. of dyspepsia caused by general diseases is never surgical, nor is the dyspepsia cured by the application of treatment direct to the stomach. The treatment must be given to cure the disease that is causing the stomach to complain. The 30 per cent. caused by neurasthenia, atonic dilatation of the stomach, gastroptosis, enteroptosis, nephroptosis and gastro-intestinal neuroses will not be cured by treatment applied to the stomach. We must treat the condition that causes the stomach symptoms. The treatment of these cases is medical except in some cases of dyspepsia caused by ptosis of the right kidney and hepatic flexure of the colon, and midline ptosis of the stomach and transverse colon when the colon has remained fixed at the hepatic and splenic flexures.

In the first, the kidney and the colon may be elevated and fixed through a posterior incision, and in the latter we may sometimes obtain good results by shortening the falciform, the gastrohepatic and the gastrocolic ligaments, one or all as may be indicated by the condition, this to be supplemented by stitching the great omentum across the anterior abdominal wall two inches above the umbilicus, to serve as an apron for the stomach. Coffey has done good work of this kind, as have others by similar operations; but in cases of general enteroptosis with continued

dyspepsia, operative treatment has done but little good. Most of these patients have inborn neurasthenia, and to treat them successfully we must begin with their great-great-grandparents, an undertaking beyond the limit of medicine or surgery. These patients and others with inveterate stomach trouble with acquired neurasthenia, gastro-intestinal neuroses and the gastric crises of *tabes dorsalis* have been persistently treated by the physician and the quack, and the surgeon has left his mark on the abdomen following a laparotomy for gastrojejunostomy. They have been treated by electricity, by Christian Science and osteopathy, have had their stomachs daily lavaged and have taken all the vile nostrums of the advertising "patent-medicine" fraud, with about the same result. They continue to complain of stomach trouble and are only too willing to try something else.

Fortunately the surgeon in his treatment of these patients in the last few years has learned much that is of value in guiding him against doing unnecessary or harmful stomach drainage operations. The impaired drainage in these cases is the result of atonic dilatation and impaired stomach motility, and not of obstruction. In such cases gastrojejunostomy does not drain, can do no good, but has done much harm. No surgeon who should be recognized as capable of treating the diseased viscera in the abdominal cavity would now try to drain the stomach in these patients. Acute ulcer of the stomach or duodenum is toxemic, caused by septic foci in other parts of the body, and is never surgical unless it be for perforation. These patients either die promptly or recover in a few weeks. Hematemesis, with no characteristic symptoms of long standing, is not surgical for it may be profuse or fatal when no ulcer can be seen, and it requires a magnifying glass to see the general erosion or fissure from which the blood is oozing. Vomiting of much blood is not an unusual symptom in cirrhosis of the liver and enlargement of the spleen, and it may be caused by acute or chronic appendicitis. That appendicitis has a causal relation to the etiology of gastric erosion or acute and chronic ulcer is evidenced by the frequent association of these conditions, and the appendicitis often appears to antedate the stomach trouble. In Hutchinson's report of twenty-four deaths caused by postoperative hematemeses, twenty-one followed operations for septic appendicitis. Every abdominal surgeon of broad experience has observed the frequent association of a chronic appendicitis with dyspepsia, and has noted the fact that in these cases, if the stomach has no organic lesion, the dyspepsia is cured when the appendix is removed.

Dyspepsia in some degree is nearly always associated with gall-stones, the removal of which cures the stomach trouble. The same is true when the dyspepsia is caused by intestinal or peritoneal adhesions or pelvic infections. When the exciting cause is removed the dyspepsia disappears. This, however, presupposes that there is no lesion in the stomach or elsewhere that may cause the dyspepsia. It is not infrequent to find in these cases an association of chronic appendicitis and gall-stones, and we may also find stomach or duodenal ulcer, to which peritoneal adhesions, pancreatitis and pelvic infection may sometimes be added. Just here lies

the necessity for the surgeon to make an examination of all the structures in the abdominal and pelvic cavities through a wide incision, where there is no contra-indication. The failure to do this has often given an excuse for criticizing the surgeon because the patients were not cured; he was accused of doing unnecessary surgery, when he should have been censured for not doing enough surgery.

In my operative work in the abdomen I never fail to make the most thorough examination of all the viscera of the abdominal and pelvic cavities except in septic cases, and in cases in which the condition of the patient is such that any continuance of the operation would endanger the immediate result. Were I to report in detail the many cases of chronic dyspepsia of long standing, with no stomach or duodenal lesion, which have come under my observation and been cured by the removal of all the pathologic conditions in other abdominal structures, the report would be too long for any one to read.

There is but one treatment that can cure the inveterate dyspepsia caused by calloused gastric or duodenal ulcer, and that is surgery, and always surgery. The symptoms may subside under other treatment, by diet, rest and the observance of correct hygienic and sanitary laws, but the disease is not cured; the symptoms have disappeared to return at another time. This is conspicuously true in duodenal ulcer. Some of these patients have been cured many times, but the symptoms always return, and in the cases of permanent cure there was an error in diagnosis; the patients never had calloused ulcer. They are always made worse in cold, damp weather, and they improve or may be entirely cured of symptoms in warm, dry weather. They are made worse by worry and overwork, but if the worry is removed and the work lessened they improve. A change from a damp, cold climate to a warm, dry climate will be followed by much improvement, or even by cure of the symptoms. These seasonal changes are so manifest that patients who can afford to do so will change their residence with the change in season. The above is true in a lesser degree in chronic calloused gastric ulcer. The anamnesis in these cases, particularly in ulcer of the duodenum, is of greater value in diagnosis than are all other symptoms combined.

While the treatment of chronic gastric and duodenal ulcers is operative, we must always be able when the stomach or duodenum is exposed to demonstrate by sight or touch, or by both sight and touch, the presence of an ulcer. This can be done, for the ulcer has invaded all the layers of the wall. If no ulcer can be seen or felt, the abdomen should be closed at once, unless a pathologic condition that the stomach has been trying to tell us about can be found somewhere else.

In all cases of duodenal ulcer and in nearly all cases of gastric ulcer a gastrojejunostomy is indicated. In duodenal ulcer the ulcer should be infolded by several linen or silk sutures introduced from side to side and deep enough to include the vessels going direct to the ulcer. Excision is seldom indicated because the patients are cured as well without it, and cancer seldom, if ever, develops in a duodenal ulcer. As nearly 75 per cent. of cancer in the stomach develops in a chronic ulcer, then in addi-

tion to the gastrojejunostomy the ulcer should usually also be excised. In many of these excised ulcers McCarty and some other pathologists have found well-developed carcinoma.

In conclusion I wish to note that 90 per cent. of ulcers in the stomach are in the lesser curvature, and that 90 per cent. of ulcers in the duodenum are in the first inch of the bowel; that 25 per cent. of calloused ulcers in the stomach and 75 per cent. in the duodenum, and that gastric ulcers are in the stomach and 75 per cent. in the duodenum, and that gastric ulcer is multiple in about 6 per cent.; and that 75 per cent. of gallstones are in women and 25 per cent. in men. In every case of duodenal ulcer there is an excess of free hydrochloric acid at some more active phase of the disease, and this is practically true in stomach ulcer, but to find the excess frequent examinations must be made at different stages of the trouble. In every case of duodenal ulcer, and in all or nearly all cases of stomach ulcer, free or occult blood will be vomited, or found in the feces if the examinations are repeatedly and correctly made. Dr. Craven Moore of Manchester, one of the most painstaking pathologists in England, reports that in a long series of cases in which operation was performed for duodenal ulcer he found in every case an excess of acid, and occult blood in the feces. While ulcer in the pyloric canal of Jomnesco is relatively infrequent, I recently found in two cases in which I operated open perforation just proximal to the pyloric vein.

526 Fourth Avenue.

PRACTICAL STUDIES IN TUBERCULOSIS *

CLARENCE L. WHEATON, M.D.

Assistant in Medicine, Rush Medical College; Visiting Physician, Chicago-Winfield Tuberculosis Sanitarium, etc.

CHICAGO

The progress of an insidious disease is sometimes better understood by the presentation of a reasonable number of statistical facts. In so doing, I do not wish to be considered an alarmist or a pessimist. We are dealing largely with a social problem, a disease concerning the masses, intimately associated with their every-day life and various vocations.

The necessity for conserving human life can more readily be understood if there is absolute evidence that we are dealing with a mildly contagious disease, capable of destroying life, yet, on the other hand, easily cured, if early diagnosed and promptly treated. The annual loss of life from tuberculosis in this country may be conservatively estimated at two hundred thousand. In the length of time the Civil War occupied, one million died, three hundred and fifty thousand more than were lost from all causes in the war.

In Chicago there are about 4,000 deaths annually. Capitalizing the man's earning power, the cost of his illness and death, Chicago loses thirty-two million dollars a year from this one disease, nine million more

* Read before the Chicago Medical Society, Jan. 22, 1913.

than is required for the city's government, four times the cost of running the county and fifty times the amount expended for State Health Department work.

In 1904 the deaths from tuberculosis in Illinois represented a monetary loss to the state of forty million dollars. Admitting that 75 per cent. of the incipient cases could be cured in sanatoria, the state, by properly providing for these unfortunates, would annually save thirty million dollars. The loss of earning power during two or three years' illness, and the increased cost of maintenance during this period of time have been estimated as equal to the direct loss from death.

The most unpleasant consequences incident to an epidemic of acute contagious disease in this city are insignificant as compared to the ravages of tuberculosis. In the former instance the disease strikes down like a thunderbolt from a clear sky, and fills the people's hearts with terror and fear, but in the silent watches of the night the white death stalks unobserved and unheeded, devoid of the spectacular, unrelenting and unmerciful, until death has won its victory and the shadows fall.

Five per cent. of the patients now under observation at the night clinic for the tuberculous at the Iroquois Memorial Hospital will within a year pass from a state of partial disability to one of complete disability, with dependency; their economic activities as individuals will cease; their usefulness as citizens in this community and state will end. Owing to the inadequate facilities at present at our command, it will be impossible to restore them to lives of activity and usefulness.

A careful study of 185 wage-earning males in this city, concerning their original and ultimate economic condition, shows that 40 per cent. became dependent on charity, and during the course of their illness 14 per cent. died in charitable institutions, and the majority of the others received at some time charitable aid, probably through the United Charities of this city, one of the most efficient and thoroughly organized associations cooperating with us in our work among the tuberculous poor.

The night clinic at the Iroquois Memorial Hospital represents patients physically incapacitated in practically all fields of endeavor, clerks largely predominating, and I believe the records from the trade clinic at the Rush Medical College will show tuberculosis largely an occupational disease, dependent in some measure on the unsanitary conditions under which men, women and children toil and live year in and year out. The records will show no evidence of tuberculosis in the case of the young prisoner prior to confinement. He returns to society in many instances a physical wreck, again a charge on the community. There lies a remedy for all this that we trust an awakened public conscience will apply. The miner develops an anthracosis in the soft coal mines; he is free from tuberculosis prior to engaging in this occupation. And so with the metal polisher, burr stone cutter and innumerable other occupations, where there is no evidence of a tuberculous dyscrasia prior to employment.

Alcohol and venereal excesses are potent factors in lowering the physiologic resistance of those engaged in outdoor occupations, such as

teamsters, usually considered healthy, a large percentage of the cases seeking relief from tuberculosis at the municipal dispensaries falling into this class.

It is evident, therefore, that this problem is of interest to the profession from a medical and humanitarian aspect, and to the public and laity from a social and economic standpoint. It is a melancholy reflection that a disease so prevalent in every country and climate, and from which neither age, sex nor condition of life enjoys immunity, a disease presenting so many complex economic problems, should until recently have been less understood and worse treated than any other to which humanity is subject.

Without regard to the circumstances of the patient or stage of his disease, change of climate has been freely prescribed. We have lacked that commendable loyalty to our home climate that the present-day methods in caring for the tuberculous have so largely created. We have in the past opened the door to regrets that have harrassed the minds of thousands of consumptives at a time when they most required repose, and in many instances the disease has progressed rapidly to a fatal termination and the expatriated invalid has found not only a foreign climate, but a foreign grave. The present-day educational propaganda, the day camp, open air school and free dispensary must be inseparably linked to the hospital and sanitarium — these latter institutions for the compulsory isolation and retention of the tuberculous in both the curable and incurable stages. The almost total lack of control exercised over the tuberculous patient in our public institutions is evident to the most casual observer. This should be remedied by appropriate legislation and such disciplinary measures employed as will hold these patients in the public institutions to which they are assigned for treatment. The infection of the entire family from a single open case is too frequently observed to lead us to assume that these measures are too radical in their practical application, or savor of an interference with personal liberty.

Our knowledge and the accumulation of facts relative to the modern treatment of tuberculosis is due in great measure to the influence of the earlier teachings of such men as Alonzo Clark, who, fifty years ago, advocated the sanitarium for the care of the tuberculous. Rush, in his treatment of consumption, directed men into paths that are to-day followed. Bowditch was one of the first to revive the doctrine of the infectiousness of consumption and suggested a mode of treatment which precluded the possibility of the direct transmission of the disease. Trudeau has experimentally demonstrated the value of pure air in resisting tuberculosis.

In 1897 the Muskoka Cottage Sanitarium was established at Gravenhurst, Ontario, the first hospital, I believe, to be established by the state for the care of consumption. Since the establishment of the Gravenhurst Sanitarium, there is scarcely a geographical division in the Union not interested in the establishment of a hospital for tuberculous patients.

We cannot hope through the medium of the private sanitarium to achieve the most far-reaching results in the solution of this problem.

The formation of antituberculosis associations, which, through private benevolence, should initiate and control the sanitarium movement, will not accomplish the desired end. These institutions, like other private sanatoria, must exclude all the indigent tuberculous patients, accepting no hopeless cases, and the very element that should be brought under control still a charge on their friends; if friendless, they soon become dependent on the County, or are left to die alone in some tenement house loft, in a crowded city.

State and municipal institutions should be established for the care of the tuberculous poor, that they may be cured of their disease, and returned to the commonwealth able-bodied citizens. The prolongation of life by the suppression of preventable disease is of much greater value to the state than the cost of the means employed. In the light of recent brilliant achievements in serum-therapy, let us hope that a more specific treatment for tuberculosis may yet be discovered. The toxemia incident to cell disintegration in the course of tubercular infection calls for more study. The intoxication incident to cell death opens the field for the greatest possibilities for scientific research and achievement.

Tubercular toxemia not being due alone to the Koch bacillus, we must consider the products set free in the human organism after the death of the bacillus, a toxic element, also a toxemia so little recognized after tissue death at the site where the tubercular process evolves, and, finally, the toxic element determined by the microbic associations.

Professor Bruschettini's communication to the Seventh International Congress at Rome marks a step in original research far in advance of all others. His endovenous or endotracheal injections into the lungs of Koch bacilli determine a flow of leukocytes therein, "after a period of time according to the size of the animal and the quantity of virulent bacilli injected, generally when the emaciation of the animal is destroyed by bleeding, the lungs collected aseptically, finely triturated with quartz powder, made into an emulsion with distilled water, placed in the agitator for about twelve hours, filtered by double chardin paper." This liquid, injected into healthy rabbits, shows itself to possess toxic qualities without, however, showing phenomena, like tubercular intoxication. If, however, this liquid is introduced into an animal which has previously undergone an injection of tubercle bacillus, we see an aggravation of the symptoms shown by the animal rapidly manifest themselves. There is a rise of temperature, with slow but progressive emaciation.

With no other means is an evolution of the consumptive process so rapid. It is with this toxic substance that he hopes to see the serum-producing animals efficaciously react, and he hopes to obtain a serum endowed with combative properties against the tubercular cell.

In the course of these experiments, Professor Bruschettini has been able to observe that the more extended the destructive process of the pulmonary parenchyma, the higher toxic power of the extract, and he is now pursuing researches made by injecting in the lungs of tuberculous animals certain pyogenic microorganisms, or the product of their metabolism.

In possession of this toxic substance, he proceeds to immunize various animals, in order to study the properties of their serums. He endeavored to obtain a serum which should possess some antitoxic properties which might neutralize even slightly some of the secondary phenomena of tuberculous infection. I commend to your perusal Professor Bruschettini's classical paper, presented to the Seventh International Congress on Tuberculosis, at Rome, April, 1912, from which I have briefly abstracted. I would ask your kindly consideration of the reports that will doubtless be published from the Brompton Hospital, London, and from the Municipal Clinic at the Iroquois Memorial Hospital of this city, covering a group of cases inoculated with this serum vaccine, and also the original reports of the control in lower animals, to be appended. We are nearer the goal of scientific achievement than ever before in the treatment of tuberculosis. Let us look to the future with all its possibilities and with honest endeavor and conscientious effort on our part may we solve this most complex scientific problem.

2733 North Clark Street.

DISCUSSION

Dr. John Ritter: Dr. Wheaton has presented to us a very able paper. Personally I have not had any experience with the Bruschettini serum and am somewhat in doubt if it has any distinct advantage over tubereulin. It is a sero-vaccine supposed to possess both active and passive immunizing properties. It is the experience of all that tubercular subjects are usually very hopeful and credulous and any innovation appeals to them and the application of any medicament by means of the hypodermic needle is much desired and so the giving of a serum or of tubereulin will have some beneficial effect upon them. Herold Vallow, of England (*British Medical Journal*, July 15, 1911), has treated a number of tubercular patients by injecting, at regular intervals, 0.1 or 0.2 c.c. of normal salt solution, carbolized (1 per cent.) with very gratifying results. The fever declined, night sweats ceased, appetite improved, cough lessened, weight increased; in general the patient's condition improved. There are now 80 different serums or vaccines on the market and I do not know that any have a decided advantage over the others and all, including Maragliano's serum, are very similar in therapeutic effect.

Dr. Albert Polon, Winfield, Ill.: The sero-vaccine of Prof. Bruschettini has had only limited applications at the Winfield Sanatorium, hence I am not in a position to give an opinion on its therapeutic value. Only a few injections have thus far been administered. We intend, however, to give this remedy a thorough trial especially for the purpose of parallel observations on cases on which we have been using the other specific remedies for tuberculosis without favorable results.

Working along the lines of Carl Spengler and his school, we are using both human and bovine types of tubereulin for therapeutic purposes. The selection of the type of tubereulin is decided by the greater intensity of the Von Pirquet reaction which is done simultaneously with the human and bovine Koch's old tubereulin on the two arms.

If the cutaneous reaction is more intense with the human type, then we use the bovine tubereulin therapeutically and vice versa. We often found that patients reacting unfavorably to one type of tubereulin would show a considerable improvement under the influence of the other.

There are, however, a number of cases which are not suitable for any form of tubereulin, and these are the cases on which we intend to try Prof. Bruschettini's serum. We are using it intramuscularly.

INJURIES TO LUNGS AND PLEURA; WITH REPORT OF
A CASE *

P. Z. McDONALD, M.D.

CHICAGO

The diagnosis of pleural or lung involvement is not always easy. Some cases with extensive injury may show very few symptoms, while others with little injury will show marked symptoms.

The pulse is often remarkably full and strong, due probably to vaso-motor influence. In injuries of the three cavities, skull, chest and abdomen, the symptoms of primary shock are greater as we go downward.

If the pleura only is involved, the patient usually has an anxious expression, cough, dyspnea, abdominal breathing, sharp localized pain on inspiration, which may be referred to the abdomen, and emphysema of the subcutaneous tissues. In the absence of these, physical examination will give definite signs of pleural exudate or hemothorax, later a friction sound may be heard over the area of injury. If pneumothorax already has developed we have rapid respiration, absence of normal respiratory sounds and hyperresonance. If bleeding has occurred, there will be flatness over the most dependent part of the chest, with absence of fremitus and respiratory sounds.

If the lung is involved, there is, in addition to the above, greater dyspnea, more distressing cough, bloody or frothy sputum and greater tendency to depression of the heart and collapse. Occasionally, on auscultation, air may be heard issuing from the wound in the lungs.

In many lung injuries marked symptoms set in at once. The patient is unable to stand, becomes pale, trembles, his voice becomes weak, extremities cold and clammy, he has livid lips, protruding eyes, distressing cough, dyspnea, superficial respiration, short, rapid, irregular weak pulse and abdominal breathing.

Dyspnea is the most alarming symptom and may develop rapidly, due to the extension of a pneumothorax or hemothorax. It may not occur for several days, and be due to increased intra-thoracic pressure from constant hemorrhage.

Hemoptysis may be absent entirely, but is fairly constant in extensive injury. Its presence depends on damage to bronchi or bronchioles. Küttner states that it may last from ten minutes to fourteen days.

Emphysema is fairly constant, and more extensive in stab wounds. In military practice in recent years it was seen more often than pneumothorax. It may begin at the base of the neck as in the fracture of the ribs, and may become very extensive.

Hemothorax in its extent and occurrence, depends on the size and condition of the blood-vessels injured. Extensive bleeding may occur from injury to internal mammary or intercostal arteries. Makins notes that even in severe cases symptoms were not fully developed for three or four days.

*Read before the Englewood Branch, Chicago Medical Society, Feb. 4, 1913.

Hernia of the lung is more common in large stab wounds, and occurs during expiration because of increased intrathoracic pressure.

The prognosis should be extremely conservative in all injuries of the lungs or pleura. The external wound may heal and the lung recover, and yet there is danger of sepsis, pleurisy, pneumonia, abscess and empyema. Senn, in his text-book presents an interesting series of such cases.

Simple penetrating wounds are usually favorable. The presence of foreign bodies may delay recovery; even when no reaction occurs at first, they may set up trouble later. Projectiles are least likely to do so; points of knives, wood splinters, or other sharp-pointed bodies will cause more trouble, because of trauma, and the greater likelihood that they carry infection. Stab wounds are less fatal than gun-shot wounds, as they produce less trauma and do not extend so deeply into the lung, but there is greater danger of empyema.

Pneumothorax is seldom complete and is sometimes absent in injuries from small caliber arms. Unless it is extensive, it is insignificant. Rehm, after exhaustive research, concludes that in pneumothorax the chief danger to circulation and respiration is due to displacement of the bronchi of the sound lung. The pulmonary ligament is stretched from the hilus to the diaphragm, and the bronchi, veins and arteries are bent and displaced, reducing the blood- and air-supply of the sound lung. A right pneumothorax is more unfavorable than a left, because of the greater lung area shut off.

Hemothorax may develop steadily and the patient die of compression. The natural closure of a severed vessel is prevented, as each inspiration sucks blood from the open vessel, and consequently any hemorrhage into the thoracic cavity may prove serious.

Irritation of the vagus may be sufficient to stop breathing in inspiration, or the heart may stop from reflex action.

Empyema is a common complication; the usual atrium of infection is from without.

Pneumonia often results from extensive pneumothorax or traumatism. Patients often show a rise of temperature from the absorption of blood in recent hemorrhage, or of fibrin from an old clot. Careful differentiation must be made between recent hemorrhage and sepsis in any increased temperature. Successive total and differential leukocyte counts will greatly aid in this. Küttner has seen symptoms resembling pneumonia which he explains by the absorption of blood.

In treatment it is most important that the patient be kept absolutely quiet. A patient may resent restraint in an apparent trivial wound, yet it is likely that many sequelae, and particularly hemothorax, result from failure to insist on absolute quiet.

Morphin, ice-bags and cool drinks, will help to control hemorrhage, and to keep the patient quiet. The wound should not be examined with probe or fingers.

Opinions differ as to the advisability of hermetically sealing the external wound. As the real object is to shut off the pleural cavity from

without, closure under antiseptic precautions and a sterile dressing will accomplish this.

Blood, temperature and pulse should be watched closely. Foreign bodies should not be disturbed unless of a nature, or in a position likely to do harm. The percentage of their recovery is low and the patient is subjected to too much danger in the attempt.

Usually in chest injuries the patient is stricken in good health, his resistance is at its maximum. The question of surgical measures should be settled as early as possible and no time should be lost in instituting the measures judged best for each case. Conditions are more favorable for an early opening of the chest cavity.

Extensive hemorrhage may be controlled by permitting or inducing complete pneumothorax, or even going in and ligating the bleeding vessels. No patient should be allowed to die without effort being made to control the hemorrhage, as pneumothorax is less to be dreaded than hemothorax.

In pressure symptoms, aspiration affords relief and promotes absorption; forced aspiration should be avoided.

Micheaux resected the seventh and eighth ribs, emptied a blood-clot from the pleura near the root of the lungs, packed the wound and left two drains. The wound suppurated, but the patient eventually recovered.

In hernia of the lung, replace during inspiration—excise any damaged portion.

CASE REPORT

CASE 1.—M. P., an electrician, aged 20 years, came to me Monday night, Sept. 19, 1912, to have dressed a slight cut on his chest. He had walked two blocks when he noticed blood on his shirt and decided to go to a doctor.

I found a small clean wound at the left fifth interspace about one-half inch left of the nipple line. There was no external hemorrhage when I saw him, the wound did not gap and it looked like a shallow cut in the tissue of the chest. He said he had been carrying his companion on his shoulders and in attempting to bump him against an electric pole, he had slipped and fallen. He thought a bit of glass or a nail might have cut him. He had felt no pain or discomfort and did not know he was injured until he felt the blood on his shirt.

I instructed him to lie upon the table while I dressed the wound, and upon attempting to do so he developed a marked dyspnea and could not lie down. Up to this time I had not thought the wound of any consequence and was rather disgruntled that he should go to a doctor for such a small matter. He could not now sit erect but sat leaning to the left, left arm akimbo and hand resting on hip. Pulse was 74, full and strong, lips pale and expression anxious, respiration rapid, shallow and grunting. Further questioning developed that he always carried a knife in his outer coat pocket, which he used to clean his nails and to skin wires. In this pocket I found the handle of a pocket set curved bistoury with the blade broken off and missing. The coat pocket lining and his shirt showed a cut slit corresponding to a position over the injury, showing plainly its cause. I put on temporary dressing and took him to the hospital at once.

Dr. Waska took several x-ray pictures of the chest; the first over the wound was negative, the second and third showed the knife blade lying on the diaphragm. Considerable difficulty was experienced in taking them as the patient could not lie down. He had complained of pain in this region both at my office and at

the hospital. At the hospital he developed an emphysema over the left chest anteriorly. There was but slight pneumothorax; his pulse was very full and strong and there was but little cough. He complained only of dyspnea and pain in the left side.

Dr. Stevens was consulted after we located the blade and he will describe the surgical measures instituted.

Tuesday after the operation our patient developed a temperature and in the evening we found some consolidation in the middle portion of the lung posteriorly. He had to be catheterized for several days and developed a cystitis, which lasted only a short time. He progressed nicely with a very little temperature until Friday noon, the fourth day, when pulse and temperature began to rise and pneumonia set in.

There was an area of dullness on the left side posteriorly extending from the spine to the axillary line and from a little above the angle of the scapula to the base. The lower portion of the lung was not yet filled up. There was increased vocal resonance and Skoda's resonance above affected area. There was no cough and very little dyspnea at any time. Temperature 102 to 103, fall by lysis, pulse about 100 to 108 during attack. Empyema was ruled out by the physical and clinical findings in connection with daily total and differential leukocyte counts. The pleural cavity was aspirated the fifth day as a further precaution and only a few drops of sterile blood obtained.

About noon of the 7th day temperature and pulse began to go down and were nearly normal on the eighth day. He improved steadily from this time. Sat up the tenth day and went home on the fourteenth day.

An area of flatness continued from the scapula to the base and from the spine to the midaxillary line, which we attributed to a blood clot or thickened pleura.

The first night our patient was home he was very restless, had considerable pain in his chest and could not get his breath when lying down. He stayed home one week, his temperature running between 101 to 102 and pulse 95 to 100.

The twentieth day we aspirated his chest and drew off about an ounce of serum which coagulated soon after withdrawal. Microscopical examination showed this to be sterile.

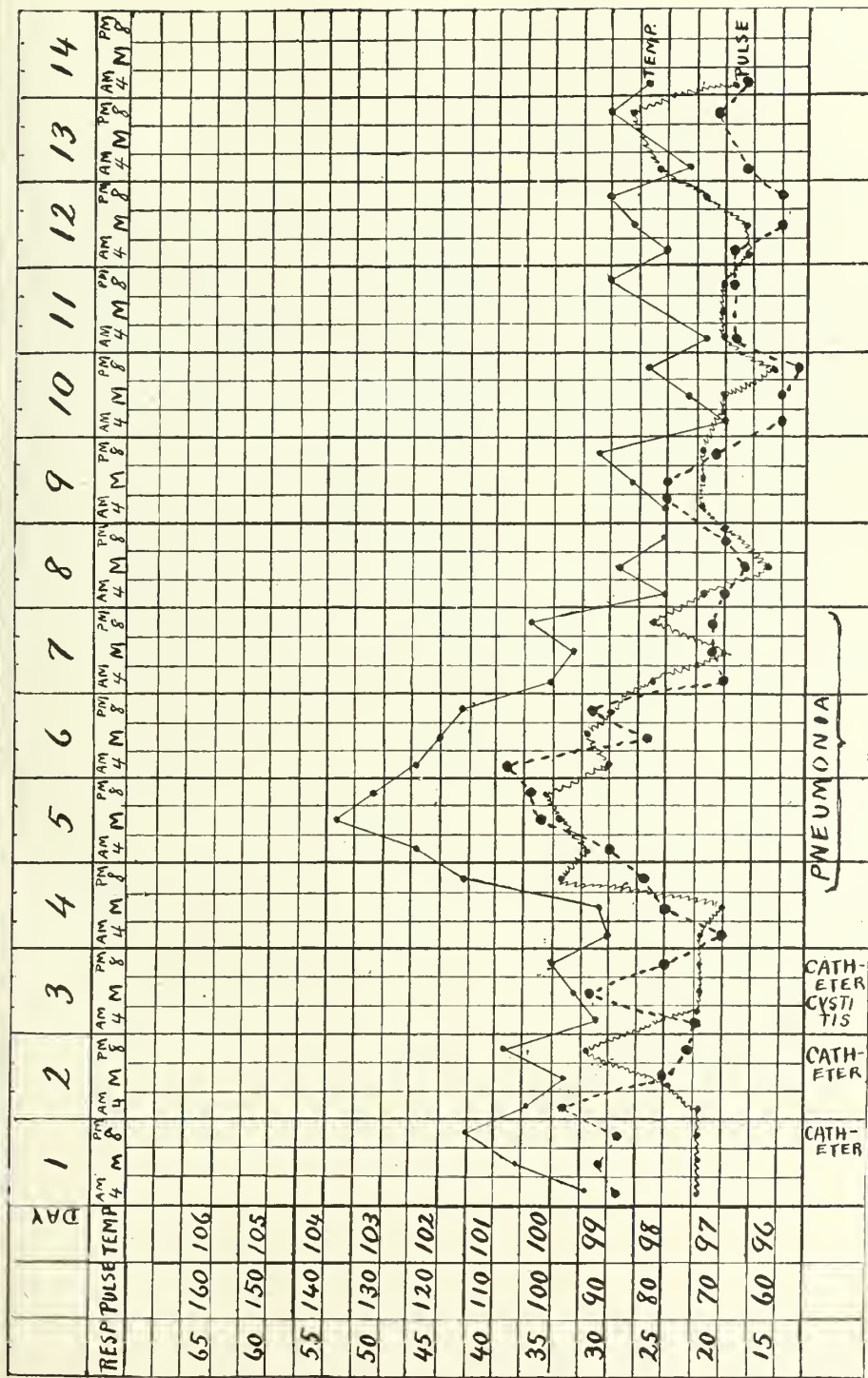
On the twenty-second day we sent our patient back to the hospital to be kept in bed and for better attention. His temperature came down the following day and remained so and we permitted him to go home again on the thirty-second day, the clot being sufficiently absorbed to cause no further trouble, although absorption was not complete for ten days more.

The temperature changes are interesting in this case. First immediately after the operation we had a temperature of 101.5 which fell slowly for four days; then we have pneumonia curve for four days and later we have a rise due to absorption of fibrin from the blood clot.

Most interesting is the accompanying blood picture; the leukocyte counts not only corroborated our clinical findings but enabled us to foresee by some hours the progress of our patient's condition.

Following J. F. Hultgen's most excellent work on this subject, we felt that our interpretation of the clinical findings was correct, and at no time were we fearful that sepsis might have caused any of them.

As a guide in the management of any chest injury, total and differential counts are as important as any other clinical finding. Successive total and differential leukocyte counts should be made in every case of chest injury, and a chart prepared from them gives valuable aid in the interpretation of the other data, management and prognosis. Discrep-



ancies, unless due to faulty technic, can always be harmonized by a more careful examination of the patient; in fact, an overlooked condition is often the reward for good blood work.

DIFFERENTIAL PERCENTAGE

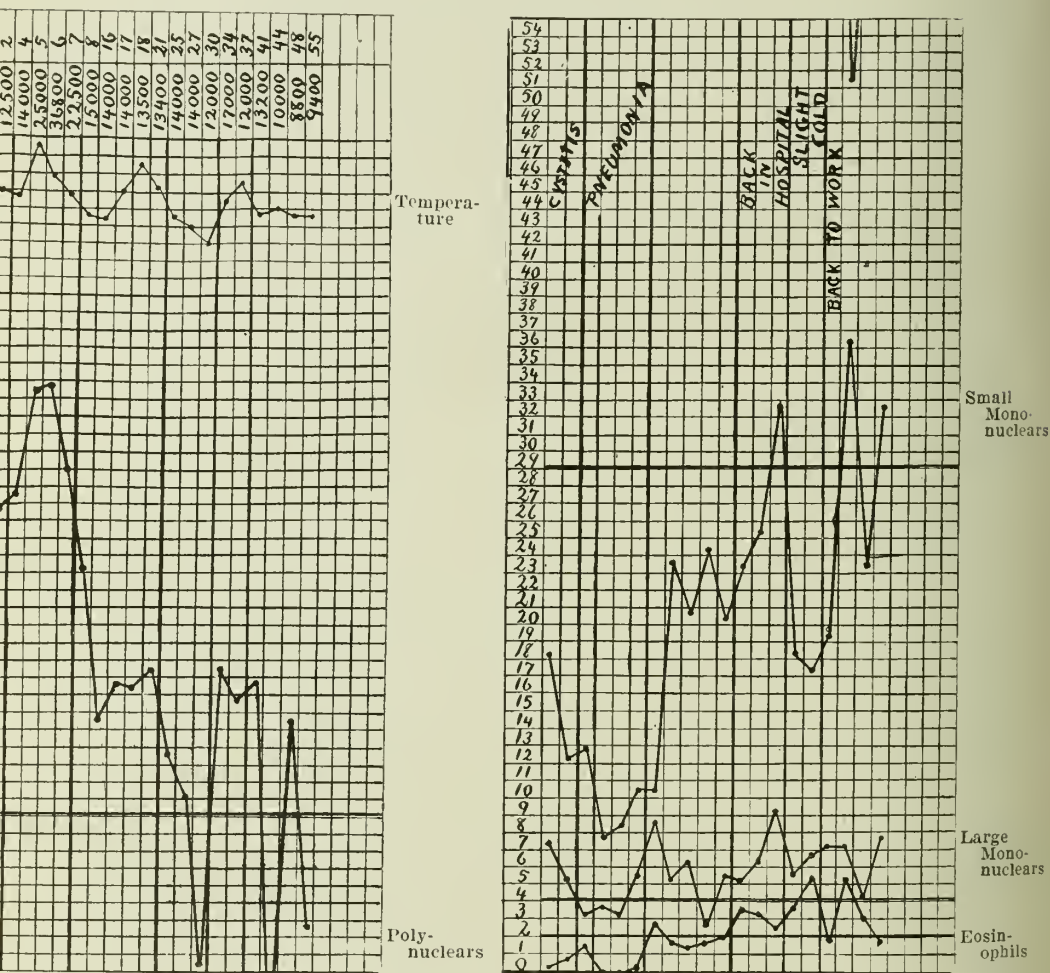


Chart 2.—Leukocyte chart for M. P. Chest injury. Note effect on polynuclears and small mononuclears during cystitis, pneumonia and slight cold. Also total absence of eosinophils during attack of pneumonia. Note also the steady decrease in the total leukocyte count and the convergence of the reciprocal curves of the polynuclears and small mononuclears as patient recovers.

Experience and care are essential in making an accurate leukocytic picture. As long as our blood examinations are left to untrained assistants, so long will our results be unsatisfactory.

1552 West Fifty-Ninth Street.

DISCUSSION

Dr. C. A. Stevens: Mr. President and Gentlemen:—Following Dr. McDonald's very excellent paper, I will speak very briefly on first, why we opened the chest in this case and second the technique of the operation.

I first saw Mr. Powers about 1 o'clock a. m., as Dr. McDonald has described him, unable to lie down, suffering considerable pain, pale and with very jerky, irregular respiration. The *x*-ray pictures already taken by Dr. Waska showed the trouble, as Dr. McDonald had suspected, to be a knife blade, lying in the fold between the diaphragm and the anterior chest wall, the edge of the blade turned down and the point directed toward the pericardium and about one-half inch from same. A physical examination showed a pneumothorax with dullness at the base of the pleural cavity behind. In deciding how to treat this case it was necessary to consider the dangers of, first, operating and, second, of not operating.

The dangers of operating were, as you all know, shock and collapse, especially the latter, immediate death often resulting upon opening the chest wall.

The dangers of not operating were first, sepsis, which could readily be taken care of later and second, the immediate danger of a severe spasm of coughing forcing the knife blade into the pericardium or heart, or even through the diaphragm into the abdominal cavity with possible damage to some of the contained viscera.

After much discussion we decided to operate at once. The patient was taken to the operating room, anesthetized with ether and prepared in the usual way. An incision about five inches long was made in the fifth intercostal space beginning at the junction of the ribs with the costal cartilage and passing through the original wound. From the inner end of this incision we cut across the sixth and seventh ribs then turned at right angles and continued the incision outward in the seventh interspace an equal distance of the first cut, thus making a U-shaped flap. The sixth and seventh ribs were cut across and the other part of the incision carried through into the pleural cavity. An osteo-plastic was thus formed and when raised we found we could get into the pleural cavity without fracturing the ribs the second time.

A blood clot, close to one pint of blood, was wiped out of the pleural cavity and search begun for the knife blade. This was not easily found, we searching the entire cavity even palpating the heart and lung before we finally located the object pretty well back, deep in the crease between the diaphragm and chest wall. It had undoubtedly dropped back while we had been opening the chest wall and wiping out the blood clots.

The wound in the lung was examined and seemed to have ceased bleeding. We replaced the flap, sutured the pleura and intercostal muscles with a row of interrupted catgut sutures. The subcutaneous tissues were then sutured with a continuous catgut suture and the skin closed with a silkworm gut. A sterile pad was placed over the wound and the chest strapped with adhesive as for a fracture of the ribs. The skin sutures were removed on the tenth day with primary union. A small amount of morphin controlled the pain, the patient going on to recovery as described by Dr. McDonald.

BIBLIOGRAPHY

- A System of Practical Surgery by A. Von Bergmann, P. Von Bruns, J. Von Mikulicz ; translation by Bull and Flint, Vol ii, 1904.
American Practice of Surgery, Bryant and Buck, Vol. ii, and Vol. viii, 1909.
Keen's Surgery, Vol. iii, 1908.
Text-Book on Surgery, Wyeth, 1897.

THE TECHNIC OF SURGERY OF THE GALL-BLADDER AND THE BILE DUCTS *

F. C. EGGERT, M.D.

CHICAGO

Anatomy.—The gall-bladder or reservoir for the bile is pyriform in shape and is confined in a slight depression on the under surface of the right lobe of the liver. It is about 4 inches long and 1 inch wide, and is capable of holding about 1.5 ounces of fluid. Its broadest part projects beyond the anterior margin of the liver and is maintained in its position by the peritoneum, which usually is continued over it from the liver, but it may occasionally completely invest it so as to form a kind of a mesentery. It is divided into a fundus, a body and a neck. The fundus is its broadest part and usually projects a little beyond the front border of the liver; from this it gradually narrows forming the body, and this again further contracts to form the neck which makes a bend downward, curving on itself like the letter "S." The neck terminates in a duct called the cystic duct, which, after a course of about one inch, joins the hepatic duct at an acute angle. The common duct thus formed, called the ductus communis choledochus, is about three inches long and of the size of a goose quill. It opens into the inner side of the back of the descending part of the duodenum after running obliquely through the coats of the bowel. The common duct lies in close relationship to important structure, namely, the portal vein and hepatic artery—the hepatic artery being to the left, and the portal vein between the two, and on a plane posterior. Normally, the gall-bladder is of a greenish color, of moderate thickness and contains a weak muscular coat. It is important to bear in mind that in the cystic duct, the mucous membrane is arranged in folds which pursue a slightly spiral course known as the spiral valve or valve of Heister. When speaking of exploring the ducts, I will touch on this point.

Operation.—The position of the patient is important. A roller or a pillow should be placed under the patient's back. The modern operating tables have a device which can be raised at will, and so a lordosis is produced making the field of operation more accessible.

The Incision.—The incision for gall-bladder exploration should be wide. I don't mean by that a post-mortem incision, but an aperture large enough to admit of easy access to the structure and a good clear view. Small incisions, just large enough, as were in vogue in years gone by, to anchor the gall-bladder for draining, are absolutely unwarranted in these days.

Types of Incisions.—A. The oblique incision (Illustration 2 Bier). It begins just below the ensiform process and runs a half finger's breadth below the costal border to the lateral edge of the right rectus. At this point, nerve and artery come into view, which should be saved. The

* Read at the Jan. 7, 1913, meeting of the Englewood Branch, Chicago Medical Society

abdominal muscles are split in the direction of their fibers, but the rectus is cut across. This incision gives one the maximum amount of room, allows the liver to be tipped upward by an assistant, bringing the gall-bladder and ducts into view. This extensive incision is only to be recommended in very fat people, or where the previous history indicates extensive changes.

B. The Bayonet Incision (Illustration 3). A longitudinal incision in the median line, then at right angles through the rectus to its outer border, then downward along the outer rectus border. This also gives a good exposure.

C. The straight longitudinal incision through the rectus muscle. After incision of the muscles, the peritoneum is split in the usual manner and the border of the liver comes into view, often covered by adhesions which are cut between two forceps and tied with catgut. We now look for the gall-bladder which may be covered by adhesions, or by the duodenum, colon or stomach, making it difficult to locate the organ. I warn you in such cases to work carefully and slowly until the gall-bladder is clearly and unmistakably before you. Many fecal fistulae have been produced at this stage by careless tearing up of adhesions or even opening the gut which had been supposed to be the gall-bladder. The round ligament may be in your way; if so, it may be cut between two ligatures and united after completing the operation.

Most important now, is the thorough protection of the abdominal cavity against infectious material. One lap sponge covers the hepatic flexure and the omentum; and a second, the duodenum and stomach medially; a third lies between stomach and liver above.

When the gall-bladder has thus been carefully freed and the abdomen protected, it is palpated along the entire tract by passing the finger along the viscus downward, feeling as the finger passes along the ducts for stones which may be present even when the history has been entirely negative.

Our method of dealing with the gall-bladder may be: First, incision, removal of stones and closure; second, incision with drainage, cystostomy; third, extirpation of the gall-bladder, cystectomy.

1. The incision with closure is indicated only in a healthy gall-bladder, the walls not inflamed and containing normal-appearing bile. If you have a gall-bladder before you, which appears normal in color, its walls not thickened, no adhesions and on palpating the viscus you find no stones, aspirate the viscus, and if the bile appears normal, one would be justified in leaving it alone. In all probability a mistake has been made in diagnosis. If in doubt at all as to the presence of stones, incise it, remove any stones present and close the gall-bladder with a double row of sutures, the first row always of absorbable material and preferably not puncturing the mucous membrane. The second row catches the serous coats and may be absorbable or non-absorbable material, as one chooses. Remember this ideal cystostomy is indicated only in the absence of any inflammatory changes. If at all in doubt — drain.

Naunyn in his excellent articles has shown conclusively that pain, fever, icterus, swelling of the liver and gall-bladder are not due to stone impaction alone. Cholangitis is the essential cause of all these manifestations, due to the presence of microorganisms in the bile, most commonly the colon bacillus which is ordinarily present in the duodenal portion of the common duct of healthy individuals. As long as the stream suffers no obstruction to its passage, this organism remains harmless because its accumulation is kept down by the constant flushing and removal into the gut. Whenever stagnation occurs for a while, a dangerous accumulation of the bacilli takes place and this leads to bacterial infection of the bile. It is not necessary that the bile stream should be completely obstructed; any degree of stagnation may be sufficient, as the gall-bladder is not a duct, but a receptacle in which stagnation is practically a constant condition. This part of the biliary tract is the starting point and most frequent seat of bile infection. You will see from this short discourse that cholecystostomy alone is indicated only in these early cases of infection without extensive changes in the bile passages, and then we must be absolutely sure that all obstruction is relieved, be it stone or adhesion. On the other hand, in long-standing cases, where the gall-bladder and ducts are the seat of extensive changes from infection caused either from the blood-stream or from the bowel tract or impacted stone, drainage should be carried into the hepatic ducts or common ducts. Imagine a gall-bladder filled with infected bile, its walls thickened and mucous membrane eroded and ulcerated, and this infection extended throughout the larger ramification of the hepatic duct. What permanent benefit can we obtain from draining the gall-bladder while the other bile tracts are left undrained? I am certain very little, although a temporary relief might be had. I believe that a good many recurrences, excluding those where stones were overlooked, are due to insufficient drainage. Of course, no hard and fast rules can be given as to just what cases need drainage of the hepatic ducts. One must be guided by the length of time its infection has probably existed as measured by the history, condition of the patient, the appearance of the gall-bladder and ducts. In some cases of severe, septic cholecystitis, simple drainage may be a preliminary procedure to tide the patient over the brunt of the affection to be followed by more radical means when the inflammatory process has subsided.

Let us consider the technic of:

1. Cholecystostomy with drainage of gall-bladder only. Incision with drainage-cystostomy. See that the gall-bladder is freed from all adhesions and that you have protected the abdominal cavity against contamination. If distended aspirate with a trocar, the assistant steadying the gall-bladder with two artery forceps or two silk sutures passed through the coats of the gall-bladder. The infected contents are caught in a sterile vessel, and when the flow stops, the incision is enlarged sufficient to explore the viscus. Now pass a sponge on a stick into the cavity to take up any remaining fluid, and remove any stones present. Then

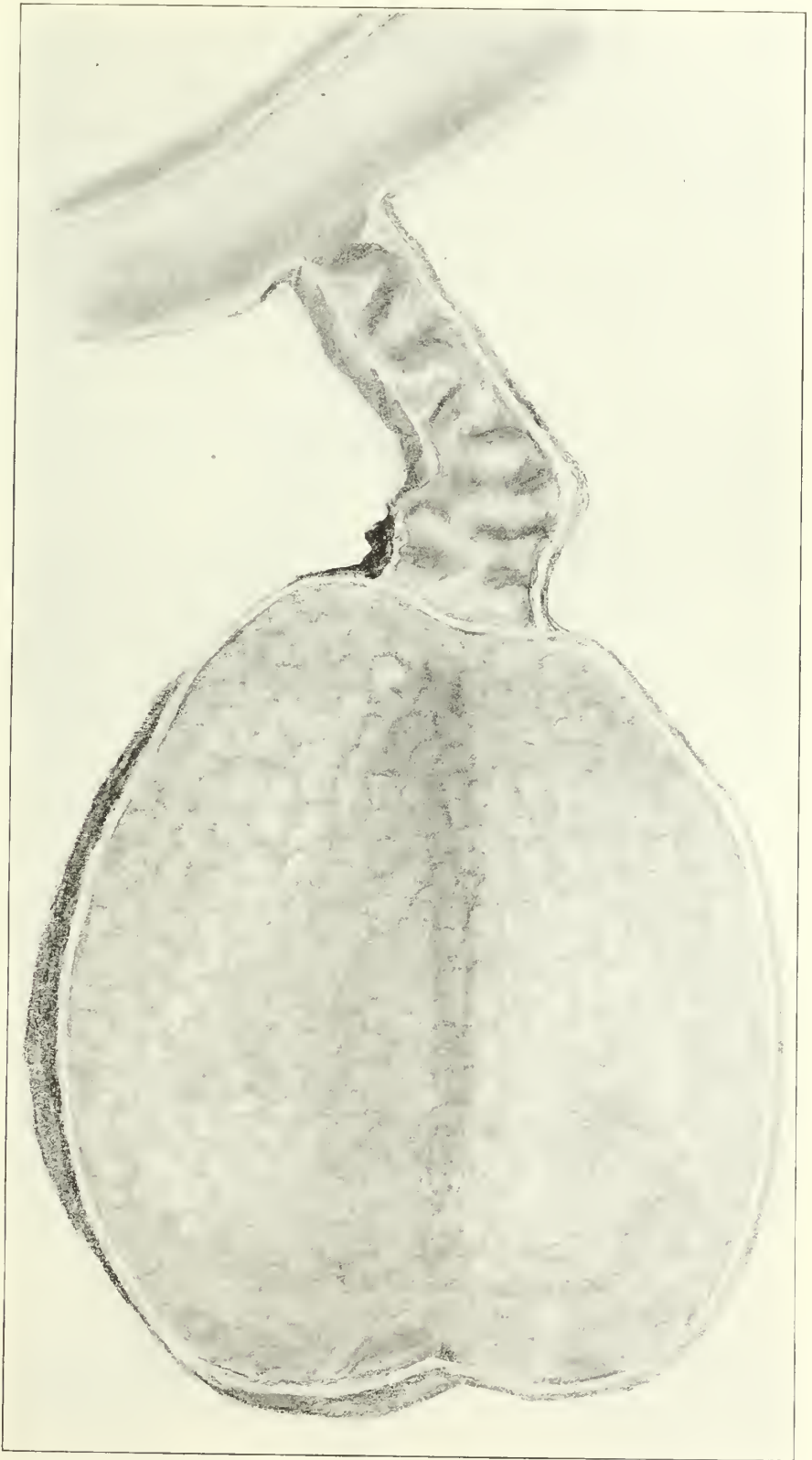


Fig. 1.—Gall-bladder filled with gall-stones. Valve-like arrangement of mucous membrane of cystic duct.

pass your finger into the gall-bladder to ascertain whether any concretions are left behind.

The text-books generally advise passing a probe into the cystic duct and common duct to make sure that the canal is patulous, but let me call your attention to the special valve arrangement of the mucous membrane of the cystic duct which prevents the passing of a sound in the majority of cases. So that one must, to repeat, be guided largely by experience or the general appearance of the gall tract. After thorough cleansing of the gall-bladder, a drainage tube is inserted, held in place by a purse string suture; a gauze strip is placed along the under side of the gall-bladder; the viscus is allowed to drop back with the tube protruding from the abdominal wound. In the earlier days of gall-bladder surgery, it was customary to anchor the gall-bladder to the parietal peritoneum, but this should not be done for the reason that the adherent gall-bladder is apt to give troublesome symptoms on account of the pulling of the viscus on the peritoneum. Secondly, it is followed in a percentage of cases by a biliary fistula requiring a secondary operation for closure.

2. Drainage of the hepatic duct. This is more often preceded by a cholecystectomy and after the gall-bladder has been incised the cystic duct is incised sufficiently to carry a drainage tube upward into the bile passages. A few catgut sutures are placed in the cut edges of the duct to hold the tube in place and facilitate closure after removal of the tubes. A gauze strip is placed alongside of the wound. Where the gall-bladder is retained, drainage may be had by incising the common duct and inserting a tube, or it may be done by splitting the gall-bladder and cystic duct to the junction of the latter with the hepatic duct and a tube inserted. In this case the opened gall-bladder is packed with gauze to take up any infected material. The gauze packing is removed on the second or third day.

3. Cholecystectomy. Wherever the gall-bladder is so changed in structure as to make its restoration improbable, it should be removed. Complete extirpation may be impossible in the very severe acute infections when the walls are mushy and soft. In these cases we must be content with wide incision, drainage and tamponing. With this exception, extirpation is practically always possible, but may require in old cases very careful dissection and separation of adhesions. 1. The old method of dissecting the mucous membrane. 2. The subperitoneal enucleation. It is the method of choice as it leaves a peritoneal covering over the raw area, preventing adhesions.

The peritoneum binding the gall-bladder to its fossa is incised over the prominent inferior surface of the gall-bladder either in one straight line in the long axis of the gall-bladder from fundus to cystic duct; or, in the form of an ellipse, especially where the bladder is large, the two limbs meeting at the fundus and cystic duct. This incision, having passed simply through the serous covering, the peritoneum is separated by blunt dissection from fundus to neck and retracted on either side. The gall-bladder itself is then shelled out by blunt dissection from its bed and freed to its pedicle keeping strictly within the connective tissue

plane. The pedicle, formed by the cystic duct and vessels, is well isolated and duct and vessels tied separately wherever possible. The divided peri-

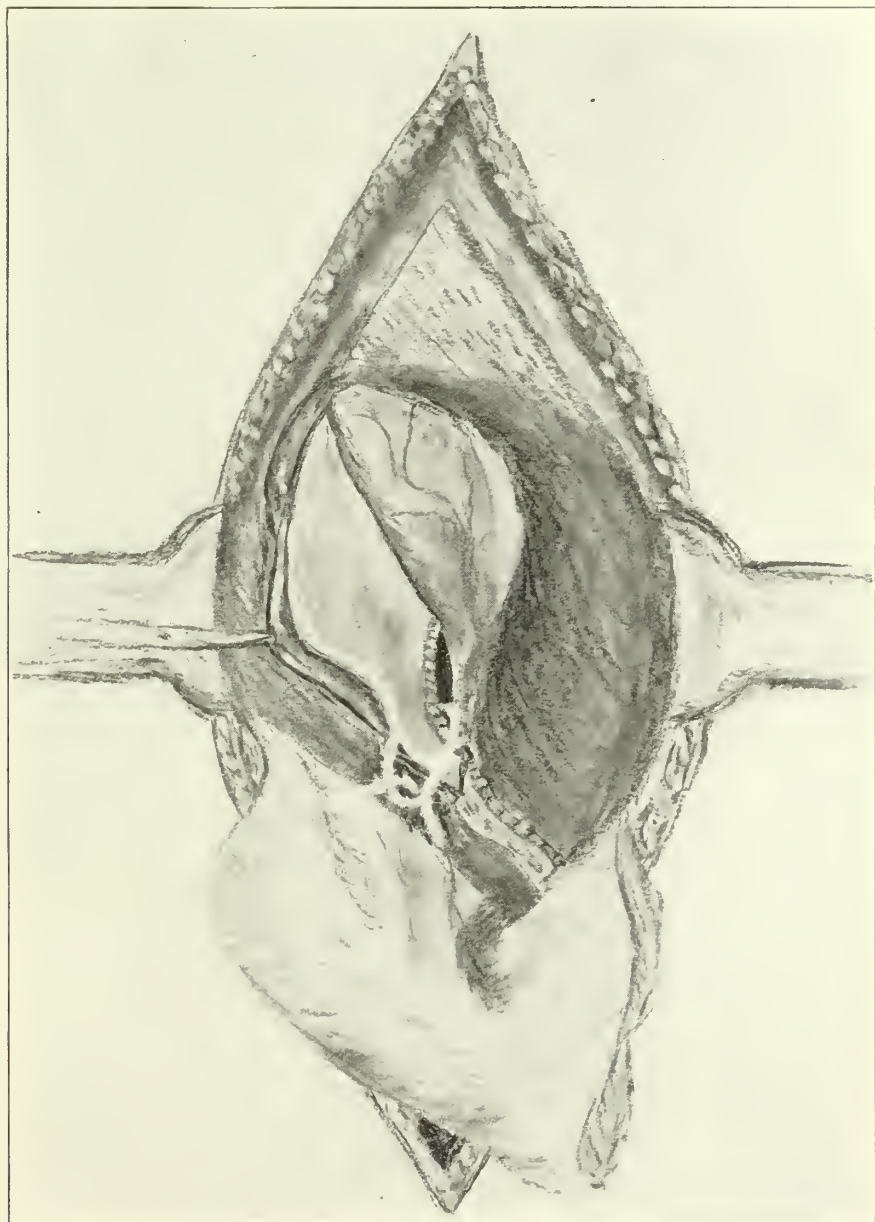


Fig. 2.—Cholecystectomy. Dissection of gall-bladder from peritoneum.

toneum is now sutured with catgut. I prefer to place a small tube in the peritoneal pouch to take care of any oozing; it remains for forty-eight hours. The cystic duct may be tied or clamped at the neck of the

gall-bladder first, and the organ removed from behind, forward. As mentioned before, this is the ideal way to do a cholecystectomy, but the separation of the peritoncum is not always so easy, and in old standing cases, with a shrunken gall-bladder, it is apt to be impossible to separate



Fig. 3.—Cholecystectomy. Ready to ligate cystic duct.

the peritoneum. The same is true in severe acute infections with pericholecystitis. In these cases the complete extirpation including the serous covering has to be done.

The gall-bladder is separated from the liver by a fascia-like membrane. By incision and dissection of the membrane, the gall-bladder is freed from the liver. A small strip of serous covering on either side of the fundus of the gall-bladder is dissected off along with this membrane so that a peritoneal covering may be had for covering the raw surface of the liver. The bleeding from the liver is controlled by compresses. We proceed downward with this dissection until near the neck of the gall-bladder a mesentery-like reduplication of the peritoneum is met, containing the cystic artery. The vessel is isolated, tied and cut, leaving the gall-bladder hanging by the cystic duct. This is cut between two ligatures, the stump cauterized if no further investigation of the bile tract is needed, and the stump covered with peritoneum. Drainage as before.

Removal of Stones.—A. Let me repeat that when the gall-bladder shows pathologic changes with or without stones, a careful examination of the entire gall tract is imperative. To do this, the liver and gall-bladder are rotated in such a way as to stretch and make prominent the common duct and bring it nearer to the surface. After tracing down the cystic duct, expose the anterior surface of the hepato-duodenal ligament down to the duodenum, demonstrate the free border of ligament to the right, insert the index finger of the left hand into the foramen of Winslow and left thumb on the anterior surface of this ligament, and follow this structure downward to the duodenum, having between the fingers the common duct to the right, the hepatic artery to the left, and the portal vein between the two and on a plane posterior. Large stones can be felt easily, but small ones may escape detection by mere external palpation, especially when adhesions are present. If a stone is felt in the cystic duct, it may be extracted by means of long blunt gall-stone forceps, or spoons. Or, it may be dislodged by stroking externally until it slides into the gall-bladder. Irrigation may be of aid if the other means have failed. Finally, if the stone cannot be dislodged, I would not hesitate to incise the cystic duct, extract the stone and close the opening. Wherever a stone may be lodged, don't crush it, as small concretions left behind in this way will form a nucleus for new stones and consequent recurrences.

The common duct may offer considerable difficulties for examination. Situated deep, often surrounded or distorted by adhesions, it may seem difficult and sometimes impossible to isolate, especially if a lot of adhesions have to be separated and the field is covered with blood. Work slowly, carefully, and if you are not sure of the common duct, insert a fine needle into what you believe ought to be the common duct and examine the fluid so obtained. When sure of your duct and it is distended and a stone can be felt, don't palpate, but first, after careful protection of the abdominal cavity, incise the duct and catch the abundant secretion with lap sponges, and then when the walls have collapsed on the stone, it can be extracted with ease. Gerster cites a case where a stone was felt by him in the duodenal end of the dilated common duct. The house surgeon's request to palpate the stone was granted, and when he proceeded to explore the interior of the duct, the stone was gone and

finally was located in that branch of the hepatic duct which communicated with the right lobe of the liver. The mechanism of the displacement is explained as follows: Compression of the distended duct necessarily means displacement of a considerable volume of bile to the right and left of the compressing finger, causing an additional degree of distention of the walls of the duct except at the point of compression. The displaced liquid thus set in motion generates two currents; one on each side of the compressed segment. If the stone happened to slip out from under the pressing finger simultaneously with the displacement of the bile, the fluid will carry the stone, which is of low specific gravity, either toward the papilla or into the overdilated hepatic duct or its branches. As soon as the finger is removed, a return wave will start from each side towards the place of temporary compression. The place of overdilatation will become less, the walls of the hepatic duct will collapse to a degree below the mean of tension, and the stone may be caught and retained. Hence an evident distention of the duct should be first relieved by incision; the rush of the escaping bile will then be apt to carry all movable stones toward the vent thus opened; or, at any rate, prevent their backward escape into the hepatic ducts.

Where the common duct is distended sufficiently exploration is the surest means of detecting stones. The sound is not so certain, as it may glide along soft concretions unnoticed to the sense of touch. Repeated irrigations into the retroduodenal portion is a valuable procedure when stones cannot otherwise be reached. When the common duct is small and narrow and contains small concretions which cannot satisfactorily be located externally, a hollow sound is best passed through an incision in the cystic duct. The common duct is incised on it. The duct may be incised along its entire length to the duodenum. All concretions are carefully removed with spoons and a sound passed into the duodenum to make sure of no obstruction at the papilla of Vater. To gain access to the retroduodenal part of the common duct, the peritoneum is incised a finger's breadth from the duodenum; this frees the latter so that it can be turned over and to the median line, exposing on its posterior surface the common duct as it is almost to enter the bowel. If pancreatic structure overlaps, it is incised, should an exploration be deemed necessary.

The most difficult step is to extract stones from the papilla of Vater. If impossible to loosen the stone from the choledochus incision, duodenotomy with incision of the papilla from the interior of the bowel is the only means. After extraction the choledochus and the duodenal mucous membrane are closed with suture, followed by a double row of sutures of the duodenum.

The hepatic duct is examined as far upward as it will permit with stone-forceps, spoon, or if sufficiently divided, with the finger. When stones are felt, but cannot be dislodged by any of these means, irrigation with a catheter is of much value.

The final step varies with different operators. Some men close the common duct entirely, leading a gauze drain out from the line of suture. Others insert a drain-tube surrounding it with gauze tampons. The

latter method seems to me the only one to insure good drainage and cleansing of the tract. The tube having lateral openings is passed along the duct a varying distance and the duct is united over it with catgut. Gauze strips are placed around the tube to take up any leakage. The gauze strips are gradually removed after the second or third day, and the tube remains until the bile regains its normal color. Whether the tube is placed upward toward the liver or down, is perhaps immaterial, or if you like, a "T" drain can be inserted.

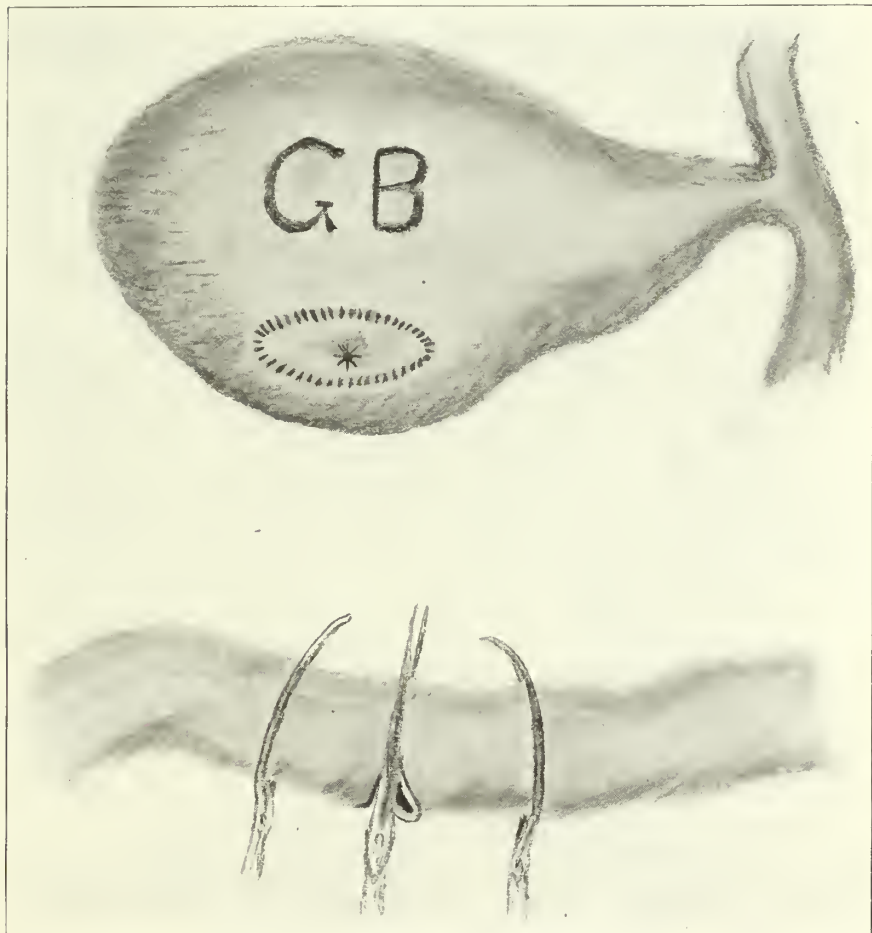


Fig. 4.—Cholecystenterostomy. First step.

Cholecystenterostomy (Illustration Bier, pages 722 and 723).—Cholecystenterostomy is indicated in obstruction of the bile tract by tumors which will not permit of radical removal, as malignant growths, benignant tumors, and chronic pancreatitis occluding the common duct. The technic is as follows:

The distended gall-bladder is emptied by aspiration and the fundus grasped and steadied with forceps. The transverse colon is held upward and a loop of small bowel about 20 or 30 cm. below the duodenojejunal junction is brought up either in front of the hepatic flexure or behind it through an incision in the mesocolon, preferably in front. A small part of the small bowel is clamped in forceps as in an enterostomy, held up

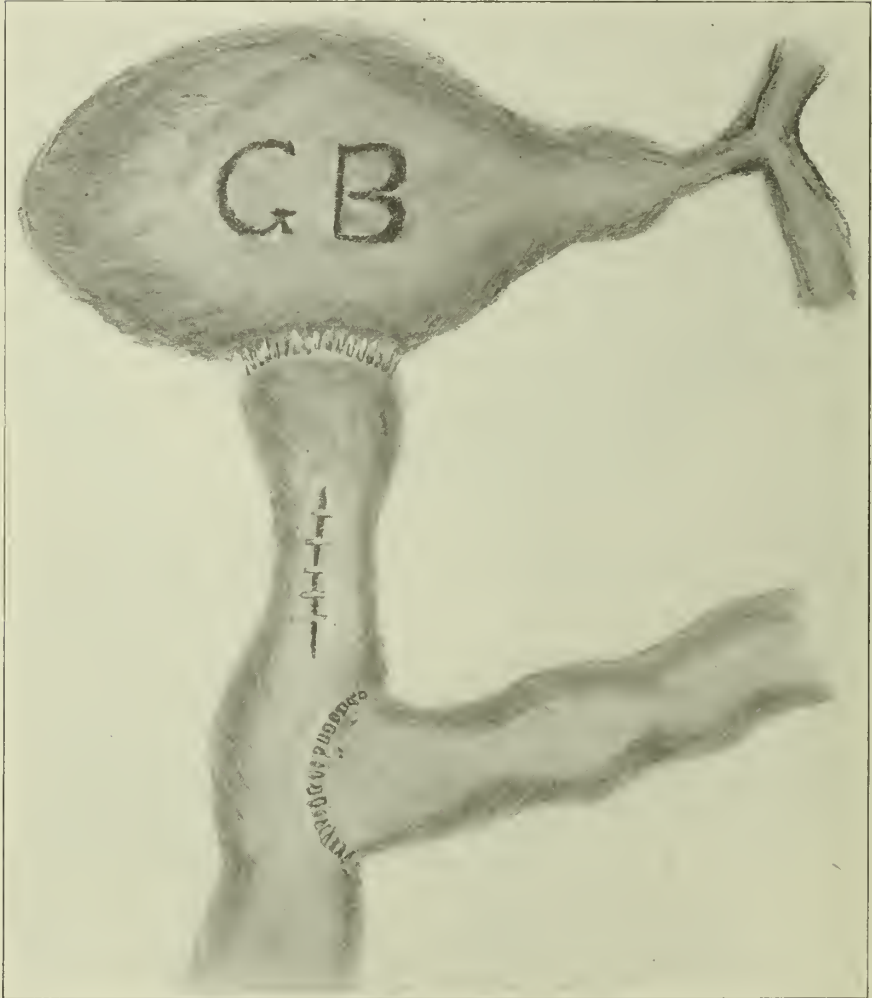


Fig. 5.—Cholecystenterostomy. Completed.

against the gall-bladder and united in the usual manner, first making a posterior serous layer of suture, followed by incision of gall-bladder and intestine and completion of the anastomosis by a double row of sutures. This method is objectionable because of the possibility of intestinal contents flowing into the gall-bladder, and to overcome this, Mont-profit has modified the method by dividing the small intestines between

two clamps and uniting the distal end to the gall-bladder while the proximal end is implanted in the side of the distal end 5 or 6 cm. below the point of anastomosis. In like manner an anastomosis may be made with the stomach. The anastomosis may also be made with the aid of a Murphy button.

The making of a new common duct by means of an ordinary rubber tube has been done successfully in dogs and man by Jenkel and Wilms.

Enderlen and Justi covered defects in the gall-bladder with omentum and found that it heals readily, and an epithelial lining on its inner surface gradually lines this covering. Liebold covered a defect of the common duct with a pedicle flap from the gall-bladder with good results.

Wilms, in the *Ztsch. f. Chir.*, cxix, 345, gives an extensive article on experimental work on dogs and cats where the common duct was excised and an attempt made to form a new duct by inserting a drainage tube between the hepatic duct and duodenum. The idea is to form an artificial canal for the time being, until a new canal has been formed by granulation tissue around the drainage tube. In due time the drainage tube is discharged into the bowel and is expelled.

In the September number of the same journal, Brandt cites four cases in which an attempt was made to form a new duct. For those especially interested, I refer them to this exhaustive article. The indications for the operation were: In Case 1, occlusion of the common duct from chronic indurative pancreatitis; in Cases 2 to 4, obliteration of the common duct from dense adhesions caused by former operations. He comes to the following conclusions:

1. The tube must not extend too far into the lumen of the duodenum, as the peristaltic action may draw the tube in to the lumen before sufficient granulations have formed to build a new canal.

2. The tube must be surrounded as much as possible with omental tissue.

He says that the formation of an artificial common duct is indicated, where, because of extensive adhesions or a preceding cholecystectomy, a cholecystenterostomy is impossible.

5258 South Halsted Street. _____

Dr. Eggert died March 6, 1913, after an illness of only five days.

THE RATIONALE OF SALVARSAN TREATMENT OF SYPHILIS *

E. A. FISCHKIN, M.D.

Professor and Head of the Department of Dermatology and Syphilology, Chicago College of Medicine and Surgery (Valparaiso University)

CHICAGO

The salvarsan treatment of syphilis has aroused a discussion to an extent unparalleled in the history of medicine. After the first enthusiasm over the discovery of Ehrlich, the field soon became divided into

*Read at the meeting of the Chicago Medical Society, March 26, 1913.

two camps: the enthusiasts and the bitter critics. Medical papers all over the world were filled with numerous instances, on the one hand, of the marvelous effects of the new remedy, on the other hand of disastrous results. On one side it was lauded as a panacea, as a magic remedy, which is going to rid the race of a dreaded disease; on the other, it was condemned as a poison. Some saw in it the only remedy to prevent the dreaded sequels of syphilis-tabes and general paresis; others said salvarsan will make tabetics. Wechselman, in the Rudolph Virchow Krankenhaus in Berlin, on a material of 300 patients a day, uses salvarsan to the exclusion of mercury, and his colleague Bushke, in the other department of the same hospital uses mercury and taboos salvarsan.

Even points distantly connected with the treatment became a matter of bitter controversy: the Wassermann reaction was magnified by some into an indisputable proof of the superiority of salvarsan; by others it was belittled as having no bearing on the results of treatment.

Even the importance of syphilis as a disease became a matter of controversy. Some magnified it into the worse scourge of humanity demanding the most heroic measures for its eradication; others again looked at it more calmly and said syphilis is by far not as bad as represented, and does not at all justify such a dangerous and drastic measure as, they say, salvarsan is. And to this difference of opinion was added a tone of bitter animosity, almost of malice. Note the tone in which Gaucher speaks in the last issue of the French *Annals de Dermatology*, of the money-makers who laud salvarsan and of the people who choose to follow the lead of German science. And in Germany itself the personal attacks on Wechselman and the other exponents of the salvarsan therapy are far from dignified.

And yet the question of the significance of syphilis as a disease is very important indeed, especially of the so-called latency of syphilis, where we find only a positive Wassermann reaction without any other symptoms of the disease. Do these cases indicate the necessity of treatment and shall we resort to such a heroic remedy as salvarsan?

I do not believe that any one of us considers syphilis as an irrelevant disease. Blaschko, in Berlin, has shown from life insurance statistics that 33 per cent. of syphilitics die of syphilis, and that in 50 per cent. of these cases death was caused by syphilis of a vital organ.

Lesser, Pick and Proskauer, also in Berlin, have found in autopsies, syphilis of internal organs in patients who had no other symptoms than a Wassermann reaction. That the Wassermann reaction gives a true diagnosis in latent syphilis was shown by a large number of autopsies in the Augusta Victoria Hospital in Schoenberg-Berlin made on patients who gave no history of syphilis and had no sign of the disease, but whose blood showed a positive Wassermann reaction.

The Wassermann reaction is a sign of syphilis, not only indirectly showing the existence of immune bodies in the blood, but (as we will see later) a direct sign of the continuation of the syphilitic process in the organism.

There is no doubt now in my mind that a patient with a positive Wassermann ought to be treated and treated until the Wassermann turns negative and *stays* negative.

Shall we treat him with salvarsan? I come now to the pros and cons of salvarsan treatment. What speaks against salvarsan? What makes it indispensable?

What brought salvarsan into disrepute?

1. *The Neurorecidives*.—It is a fact that neurorecidives or syphilis of the nerves, cerebral as well as peripheral in the form of paralysis and paresis of the facialis, opticus and acusticus, etc., and also meningeal syphilis, leading to epileptic attacks, have been seen in comparatively large numbers since the use of salvarsan. The experience with atoxyl, an arsenic preparation which led to blindness and deafness, was yet so fresh in the memory of the profession, that salvarsan was suspected as a neurotropic poison.

But it is also a fact that since salvarsan is used in larger and more efficient doses the neurorecidives have been observed less frequently. If you examine the disastrous reports of salvarsan you will notice that they came in the majority of cases either from authors openly adverse to salvarsan, like Finger in Vienna, or from physicians who were cautious and still on guard to learn what salvarsan will do, who formed their opinions from the first failures they encountered. Even they have reported that the neurorecidives were cured by further administration of larger doses of salvarsan. Now, if a larger dose of salvarsan will cure a neurorecidive, it surely cannot be the cause of the neurorecidive. In clinics where I have seen salvarsan used intensively and systematically, like Wechsman's in Berlin, or Genmerich's in Kiel, accidents have not happened or have happened at first when they did not have the experience they have now. Genmerich has encountered only three neurorecidives in 600 cases, and only one death which he attributes to an extraneous cause.

To understand the *modus operandi* of a neurorecidive and its relation to salvarsan, we must analyze and interpret briefly the experience of the last years.

Soon after the discovery of the spirocheta, when the method of early, so-called, abortive treatment of syphilis forced itself on the medical mind, the observation was made that after one thorough course of mercurial treatment the secondaries, though retarded, appeared after some three to six months in a somewhat violent form, especially did they notice circumscribed syphilitic lesions, even tertiary lesions appearing in the early secondary period, that is three to six months after the appearance of the primary lesion, in a somewhat severe form, the more severe the more thorough was the abortive mercurial treatment given. A complete sterilization of the patients with avoidance of recidives was gained only by repeated courses of intensive mercurial treatment; for instance, ten to 15 injections of 40 per cent. calomel suspension per course, given in two to three courses, in intervals of not more than six weeks. These occurrences of recidives have led to a protest against the abortive treat-

ment, claiming that it breaks into the normal course of the disease and that it provokes malignancy and tertiarism.

What is the significance of these phenomena? Apparently this: That one course of mercurial treatment is not sufficient to destroy all the spirochetes of the body. There is obviously a limit to the absorption of mercury by the organism. In the first days of the infection, when we can suppose that the spirochetes are still circulating in the blood only and have not yet passed through the capillaries into the tissues, we may expect their complete destruction by having mercury circulate in the blood, but as soon as the spirochetes have passed through the capillaries and have localized perivascular or deeper still into the tissue, mercury will not be able any more to reach them, at least not in a short time. Mercury coagulates the albumin of the cell and when the cell is altered in its function it will absorb no more, but will prevent diffusion and will not permit the mercury to penetrate into the deeper tissue till in time the metabolism of the cell has improved. This is the reason why two to three courses of treatment are necessary in primary cases to produce complete sterilization. In secondary cases, where the spirochetes are already disseminated in the deeper tissues, it will take still longer to produce a deep penetration and a cure.

Why does an insufficient, though thorough abortive treatment of a primary case produce malignancy of symptoms? Because of the limitation set by the tissue cells to the diffusion of mercury; it will permit an incomplete sterilization of the blood, not touching the deeper tissues where the spirochetes have localized; here foci are formed, so to speak, multiple chancres which are the source of a subsequent new and more violent invasion of the body.

The recidives are, as you see, not peculiar to salvarsan only. They are produced by mercury also if the treatment was sufficient to sterilize the periphery—the blood—and not enough to destroy the spirochetes in the deeper foci of the tissues. That was the reason why a Wassermann reaction in the recidives was observed at times to be negative while there were unmistakable lesions on the skin; a phenomenon which was not understood at that time and which was thought to discredit the Wassermann reaction.

Why does not mercury produce neurorecidives? Because the penetration of mercury is not deep enough to sterilize the entire body and leave only the least approachable parts untouched, the single foci. These least approachable parts are the nerve tissues within the cerebrospinal canal. Covered by tough, fibrous, non-diffusing membranes, the dura and arachnoidea, and having comparatively little vascular communication with the outside, mercury has less chance to circulate within the cerebrospinal canal and through the sheaths of the cerebral nerves than it has in all outside tissues. If mercury will therefore succeed in penetrating all the deeper tissues of the body (and it does so only after thorough and prolonged treatment), leaving only the cerebrospinal canal, into which it can apparently never penetrate, untouched, it will then indeed have sterilized the entire outside body and will have left the spirochetes within the

cerebrospinal canal untouched: it will then have produced nerve-syphilis, the neurorecidive. That mercury does act that way, we have the testimony of the greatest authority on syphilis, of Fournier, who in his book on late secondaries says that tertiarism is observed in patients who have had insufficient treatment. We can explain it now, because the mercury could not penetrate into all the tissues and had left circumscribed foci of spirochetes which through long action on these circumscribed localities produce obliteration of blood-vessels, obstruction of circulation between these localities and their surroundings, produce in other words demarkation of the syphilitic process, the circumscribed gumma. Again Fournier says, that tabes is observed in patients who had thorough and prolonged treatment; the more thorough the treatment the more chances for the patient to become tabetic. This phenomenon too we can explain now by the fact that the thorough saturation of the body with mercury has succeeded in sterilizing all the tissues with the exception of the spinal canal and that here the spirochetes could without interference exert their action on the spinal cord.

Nerve syphilis is, as you see, not new. It is and it always was observed in mercurial treatment if the conditions were favorable; that is, if all the tissues were sterilized except those imbedded in the dura and arachnoidea and in the nerve-sheaths.

Still nerve syphilis or neurorecidives were not observed so frequently in mercury treatment as now after salvarsan treatment. Why?

The spirochetes have a tendency to rapid expansion. In the beginning, at the place of inoculation, they produce a reactive inflammation, the primary sore, with infiltration, edema and inflammatory exudation; but as soon as they have spread and invaded the entire body the local reaction ceases and the primary sore flattens down and disappears. The same holds good in every single isolated focus of spirochete accumulation, in every so-called monosyphilitid. It acts like a primary sore.

Now mercury has not the power of sterilizing the entire body and of leaving only one isolated single place of infection. There are always many foci, many centers left, though perhaps in latent form. The single focus, even if localized in the nerve tissues, cannot have the strong reactive power that the chancre has, because the expansive power is detracted by the other foci which are coexistent, and which mercury was not able to eradicate. It is different with salvarsan. Its superior spirocheticide powers are beyond doubt. We can see the spirochetes disappearing from blood and lesions after only one injection, which we have never seen accomplished by mercury. In sterilizing the blood so rapidly and deeply, though insufficiently, salvarsan will after one or two injections destroy the spirochetes where the blood easily circulates, in the capillaries and even the deeper tissues, but will not be able to penetrate into the cerebrospinal canal, where diffusion is obstructed. The result will be that in these canals, especially at the narrow bone openings, foci of spirochetes will be left, and the more efficient the action of salvarsan was, the more it has sterilized the peripheral blood, the more these foci will assume the character of primary sores; that is, they will produce a

severe local inflammatory reaction, and either by pressure on the nerve or by direct alteration of the nerve tissue, will they produce paresis or paralysis of the affected nerve. Hence the frequency of a neurorecidive after strong but insufficient salvarsan treatment. A direct illustration of this action of salvarsan was observed in the Marine Hospital in Kiel. The patient infected himself the last of May. June 12 he received in New York an abortive treatment of a single intravenous salvarsan injection. The chancre disappeared rapidly. Scarcely eight weeks later, August 7, he awoke with a left-sided facial paralysis after a preliminary headache of three days. October 3 he came to the marine hospital in Kiel, with a complete paralysis of the facial nerve with lagophthalmos and a recent general macular exanthem (a roseola), which had existed ten days. He received seven intravenous injections of 0.5 salvarsan each in intervals of about five days, and from October 5 to November 30, fourteen intermuscular injections of calomel. His Wassermann reaction acted as in a primary case, it remained positive from October 3 to October 30, and was negative from November 5 to December 8, when he was discharged clinically cured. Here we see an insufficient abortive treatment in the very early stage, two to three weeks after infection; eight weeks after the salvarsan injection, sudden facial paralysis after some slight meningeal symptoms; six and a half weeks after, appearance of a roseola with a positive Wassermann reaction; the focus left at the basis of the skull had acted absolutely like a fresh chancre.

2. The second reason for discrediting salvarsan was the large *fatality*.

There were too many cases reported in which death occurred as a result of intravenous salvarsan injections. That these deaths were due to arsenic poisoning could not be disputed. But the experience of two years has shown in what conditions salvarsan proves fatal and has taught us to recognize these conditions.

In an address which I heard Wechselman deliver in the Charité in Berlin, he very truly remarked that salvarsan death cases have all been observed to occur under coma, resembling the coma in renal obstruction. Salvarsan is toxic, no doubt, in doses larger than the human organism can tolerate. Arsenic coagulates albumin and when the cell is over-irritated, especially the excretory epithelium, it will become harmed in its function, or the function will cease entirely. Anuria will set in, elimination of salvarsan will become impossible, arsenic will accumulate in the body and produce its toxic and fatal effect on vital centers. Insufficiency of kidney secretion is, therefore, the strongest indication against the use of salvarsan. Nephritis, heart disease and cirrhosis of the liver will call for caution. And since they have become more cautious in the selection of cases, they have not met with any more fatal accidents.

3. By-effects of salvarsan during and after intravenous injections: (a) high temperature; (b) malaise and vomiting; (c) cyanosis; (d) collapse.

To Wechselman belongs the credit of first calling attention to the fact that most of these effects were due not to arsenic, but to the impurities of stale sterilized water which he showed to contain dead saprophytic bac-

teria and which, when introduced into the circulation, produced the chain of symptoms which were wrongly attributed to the salvarsan. The technic of distillation and sterilization of water and instruments, as I have seen it in Berlin and in Kiel, is carried out in such a way, that distilled water is redistilled not later than one hour before injection in a carefully selected distilling apparatus with no possibility of breaking off of rubber or cork; the distilled water is put in chemically pure glass bottles made of so-called Jena-glass free from admixture of lead or other metallic substances, all the pots, cylinders, and Erlenmayer flasks are boiled and rinsed with the redistilled water; the needles and syringes are boiled and rinsed after each individual injection. Since then accidents in the hospitals have never occurred.

Besides these precautions they have learned to individualize their cases and to weigh their doses. Salvarsan, as they have proven, has no organotropic properties and is not more poisonous than mercury when administered in appropriate doses.

That an overdose will become poisonous goes without saying, but this holds good also of mercury. We have all had this experience. The dose of gram 0.6 salvarsan is altogether too large; it can be tolerated only by very strong and healthy individuals. There is a limit to any toxic drug which the blood will carry through the system without harm. If the dose be too large it will coagulate the albumin of the cells of the secretory organs, produce parenchymatous degeneration of the epithelium in the tubuli contorti and cause nephritis or it will cause enteritis and stomatitis. The function of the kidneys may cease completely, the glomeruli become entirely impermeable; anuria will ensue, arsenic will accumulate in the blood and exert its fatal effect on the vital centers. This is in all probability the mechanism of death in these cases.

A dose of gram 0.6 shall be given only in primary cases when the blood-vessels have not suffered yet from the effects of syphilis, where there is no probability yet of syphilitic vascular changes, and where the diffusibility of the drug through the blood-vessels has not yet been altered. In women and weaker males, it shall not exceed gram 0.4 for the first injection and less than that for the succeeding ones, in weak persons the initial dose shall under some circumstances not exceed gram 0.1.

If we will individualize the dose and take precautions in the preparation of the solution and in the technic of injection, accidents will not happen. Every disturbance in the health of the patient, such as diarrhea, dyspepsia, even lack of appetite and fatigue shall put us on our guard; in other words, make your injections under the best possible conditions which shall assure you a rapid and undisturbed absorption and elimination of salvarsan through the system. Watch all the symptoms in the patient after the first dose, such as elevation of temperature, malaise, vomiting, diarrhea or lack of appetite, and arrange time and amount of next dose accordingly.

Neosalvarsan is used little, at least as a routine treatment, in most of the German clinics I have seen. The advantages of the neosalvarsan are

the neutrality of the preparation and its easy solubility; it is a great convenience not to have to go through the trouble of neutralization. Its toxic power is less than that of salvarsan, as is also its effect. It requires more injections, that is a more prolonged treatment, which may produce undesirable cumulative effects. The preparation is besides more easily decomposed than salvarsan, and can occasionally become very toxic.

Besides the symptoms mentioned, there is another reaction which may be observed during infusion of salvarsan and that is sudden cyanosis. It is observed in salvarsan only, rarely in neosalvarsan, usually after repeated injections, after the fifth or the sixth injection, and is therefore regarded as a reaction anaphylactic in nature. The attack usually comes on after the salvarsan has started to flow into the vein, usually after 30 to 50 c.c. of the solution has been introduced. The patient experiences at first some paresthesia in the extremities, followed by a feeling of pressure in the epigastrium or cardiac region, followed by difficulty in respiration and cyanosis, in extreme cases loss of consciousness and collapse.

As soon as you notice this symptom, stop the flow of salvarsan, give heart massage, give oxygen inhalations, make rectal or subcutaneous infusion of physiologic salt solution, in extreme cases vena sectio, in convulsions lumbar puncture, even trephination of the skull.

The Wassermann Reaction.—Its meaning is still not yet quite understood. It has apparently little to do with immune bodies; that is, it is not a specific in a biologic sense between an antigen and an antibody, for we get the reaction with specific as well as non-specific antigens. We see also the reaction often missing in all circumscribed monosyphilitic lesions where antibodies are present; it also appears late in primary infection, usually after five to six weeks, when the system has already been permeated with the virus and antibodies undoubtedly formed; this speaks against the reaction being of a specific character. And yet, as I have mentioned before, it is proven by a sufficient number of post mortems that wherever the reaction was present there was syphilis. It is therefore more plausible to assume that the Wassermann reaction is a ferment process produced by the breaking down of lymphocytes in small cellular syphilitic infiltration or granulation tissue. It seems to appear only after granulation tissue or perivascular infiltration has developed and is breaking down, in primary cases five to six weeks after appearance of the chancre, in later cases after cessation of antisymphilitic treatment. It is, in other words, a biologic process produced by the ferments which were set free by the broken-down lymphocytes. Without regard to their nature, they are called in German "reagins," or better still in English literature "Wassermann bodies."

A negative reaction, therefore, does not indicate the absence of syphilis. It simply tells that at the given moment syphilitic granulation tissue does not break down or their ferments do not come into the circulation. This may be the case in later years in the so-called late latency, when the syphilis itself has been weakened by time so that only a few

granulation cells break down and little reagins are formed, or in early syphilis, when granulation cells are formed, but do not yet break down.

The negative reaction of recent syphilis does, therefore, soon become positive under good antisyphilitic treatment, because the treatment will induce absorption of infiltrations and will set the reagins free. It is different in tertiary lues. Here the syphilitic process has produced such changes in the blood-vessels, endarteritis or thickening of the endothelium, as not to admit any more a free diffusion of metabolic products. The reagins, even if they are formed, and they are surely formed in the broken-down tissue of the gumma, cannot pass any more through the obliterated and changed blood-vessels. The syphilitic lesion necrotises but does not become absorbed, and the blood is therefore free of reagins and gives no Wassermann reaction. Only a vigorous antisyphilitic treatment may improve for a time the vascular structure so as to admit again a diffusion of the reagins and induce again a positive reaction, perhaps for a short time, say for one day only. Gennerich calls it "die positive Schwankung der Reaction"—The positive vacillation of the reaction. One injection of salvarsan is capable of inducing it, that is, to turn a persistent negative reaction in late syphilis into a positive. He calls it a "provocation" injection and argues that it shows the superior qualities of salvarsan.

A positive serum reaction is always a sign of an existing syphilitic process and an indication for treatment.

A negative Wassermann reaction can be prognostically relied on and taken as a sign of the extinction of the disease only in the following conditions:

1. In abortive treatment, that is, in a recent chancre with a negative Wassermann reaction. If the negative Wassermann remains negative fourteen days after starting salvarsan treatment, Gennerich says, basing his deductions on prolonged and systematic control by Wassermann reaction of his hundreds of cases, that from three to four salvarsan injections, in combination with from six to eight calomel injections, will produce a complete and lasting sterilization.

2. If the Wassermann reaction was already positive before starting treatment, six salvarsan with ten calomel injections will be necessary.

3. Recent secondary syphilis, which gains a negative Wassermann after three salvarsan injections given in intervals of four days, can be completely sterilized with six salvarsan and fifteen calomel injections, without running the risk of a neurorecidive. In all other cases repeated courses of treatment (at least two or three) will be necessary.

4. In later syphilis, three to four such courses are required.

5. A negative Wassermann in all latent cases has a prognostic meaning only when preceded by absolutely reliable and intensive repeated courses of antisyphilitic treatment; otherwise he advises making one or even two to three provocatory salvarsan injections, which will turn the negative into a positive reaction. It is in these cases of late latency that salvarsan is triumphant, for according to Gennerich's experience mer-

cure alone never attains a lasting negative reaction in these cases. The "provocation" injection has also its drawback. It sets reagins free, but it also lets loose the spirochetes which may become more virulent in response to the irritation produced and may cause dangerous neurorecidives, if not followed immediately by intensive salvarsan treatment. It will work here the same havoc which insufficient salvarsan treatment will work in abortive treatment of chancres, in producing neurorecidives.

Gennerich uses provocation injections twice: one after the first year, and again at the end of the second year. Both times he makes daily blood-tests for fourteen successive days. If no positive Wassermann appears, he assumes that the patient is forever cured of his syphilis. But this is not enough. Each year in addition to the blood-tests, he makes a lumbar puncture for the examination of the spinal fluid, before he is convinced that the patient is forever cured.

The lumbar punctate is now an important diagnostic and prognostic measure in the treatment of, we may say, all cases of syphilis, especially those which give suspicion of the involvement on the nerve structure. It shall be done by every physician who treats syphilis, and every physician who undertakes the treatment of syphilis shall assign to himself the work of the neurologist as he is now appropriating the work of the syphilologist. If done carefully, the spinal puncture is easy and without danger.

The spinal fluid is then subjected to the following examinations:

1. Determination of the albumin contents after Nissl: 2 c.cm. of spinal fluid are mixed with 1 c.cm. of Esbach's reagent and the precipitated albumin measured in Nissl's albuminometer.

2. Nonne's test. A saturated solution of ammonium sulphate is brought together with equal parts of cerebrospinal fluid in a small test tube. A cloudiness or opalescence must appear not later than three minutes. Depending on the quickness of appearance and the degree of cloudiness we distinguish slight and strong reactions.

3. The counting of the lymphocytes. The spinal fluid is put into the centrifuge for twenty minutes. The sediment is then placed with a capillary pipette on a cover glass. After drying and fixation with methyl-alcohol, is stained with Giemsa and the lymphocytes counted.

4. The Wassermann reaction is made with the spinal fluid the same way as with blood.

5. The gold-solution reaction. This was only lately discovered by Dr. Lange, an assistant of Wechselman in the Rudolph Virchow Krankenhaus in Berlin. His reaction consists of the following: It was known that albumin decomposes a solution of gold-chlorid. Clear gold-chlorid solution has a purple red color. If he mixes it with normal spinal fluid it does not change, if the fluid contains albumin it will change the color in different gradations from purple-red to red-blue, blue-red, lilac, dark blue, light blue, white-blue, and finally clear watery. According to the degree of change, he distinguishes different degrees of the reaction. This reaction is very sensitive and Lange claims that he always gets his

reaction when Wassermann is negative. What is more, this reaction gives different color changes in tabes and general paresis and Lange claims that he can predict the coming nerve syphilis, and predict also if it will be tabes or paresis, when there are as yet no signs of any nerve tissue involvement.

32 N. State Street.

CARDIAC ARRHYTHMIA *

ELLIS KIRK KERR, M.D.

Assistant Professor of Medicine, Rush Medical College; Attending Staff in Medicine,
Cook County Hospital

CHICAGO

It happens to all of us that we meet cases showing arrhythmia. In some of these cases we have undoubtedly to do with a very serious process, and we lay considerable stress on the irregularity. In others we know from associated conditions that the arrhythmia is of practically no moment. In all cases, however, a disturbance of the heart's rhythm demands a thorough study and a discussion of the methods of analysis of such a case is well worth while.

It is necessary before proceeding to the method of analyzing the individual case to consider briefly the mechanism of the heart's action. The circulatory system begins early in fetal life as a ventral tube, with a contracting portion, that later becomes S-shaped, and still later, by folding on itself, forms the adult heart. The beginning of the contractile portion persists as the part of the right auricle at the point of entrance of the large veins—the so-called sinus venosus—and it is here that contractions begin in the adult heart. There have been propounded two theories of cardiac action, the neurogenic, which supposes that the heart contracts rhythmically in response to nerve stimuli from without, and the myogenic, which considers the impulse to originate in the heart muscle and to be carried by continuity of muscle from one part of the heart to the other. The latter is at present the best working hypothesis, and while there may be an element of doubt as to whether the primary rhythmic stimulus is purely myogenic or whether it originates in ganglionic cells, it at any rate arises in the heart itself independently of outside stimuli, while at the same time it may be influenced by outside control, by the vagi, for example. The impulse is undoubtedly carried from one part of the heart to another by muscular continuity connection between the auricles and ventricles being established through a bundle of fibers in the auricular-ventricular septum, known as the bundle of His. When this bundle is destroyed, continuity is lost and the auricles and ventricles contract at their own rate, the ventricles twenty to thirty, the auricles eighty to ninety, times per minute, the condition being

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known as heart-block. We find then that heart muscle has five functions, namely:

1. Rhythmicity or the power to originate impulses to contract rhythmically.
2. Irritability, or the power to respond to external impulses to contract.
3. Conductivity, or the power of conducting impulses from one part of the heart to the other.
4. Contractility.
5. Tonicity.

To these functions we must add another property of heart muscle, namely, that when it contracts in response to any stimulus it does so to its full extent, and immediately thereafter it enters on a refractory stage of varying length, during which it will not respond to any stimulus, however strong.

Our knowledge of cardiac mechanism has been acquired from many sources. Experimentally in the laboratory many details have been worked out. Thus Erlander, by an ingenious contrivance for gradually destroying the bundle of His in dogs, produced every graduation from an occasional blocked beat up to a complete heart block, and thereby proved the importance of the bundle. Clinically, the polygraph in the hands of James Mackenzie and others has added a wealth of detail. This is an instrument for recording simultaneously the venous pulse in the neck and either the radial, apex or carotid for comparison. The venous pulse has been known and recognized for many years. We are all familiar with the positive or systolic pulsation resulting from a regurgitation through incompletely closing tricuspid valves, which has always been considered a most valuable sign of tricuspid regurgitation. True, Mackenzie now casts doubt on this explanation of the sign, and as a matter of fact its value is slight in comparison with the negative, or presystolic, or physiologic pulse. This is a wave seen in the neck over the jugular bulb that results from the interruption to the downward flow of the blood caused by the contraction of the auricle. It is not a pulse at all, but is rather a filling up of the veins, but it does mark the time of auricular systole. The polygraph records this wave and others, and they may all be differentiated by their time relations by means of the simultaneously recorded radial or carotid or apex. It is impossible to over-estimate the value of the results obtained by means of the polygraph. The electrocardiograph, which is an instrument recording electrical changes resulting from the heart's contraction, has for the most part confirmed the findings of the polygraph and has added to our store of knowledge materially—in fact, both of the instruments have been of inestimable value in explaining what were previously very much muddled matters, and are now of great value in recording transitory conditions and illustrating difficult points. It is often necessary to make diagnoses without either instrument to help us, however, and in many cases this can be done, provided the data at hand be carefully observed and collated. It goes without saying that the usual diagnostic data—location

of the apex, size of the heart on percussion, tones, etc., on auscultation, and the character, rate, pressure, etc., of the pulse—all of these are to be noted. We are concerning ourselves particularly with disturbances of the rhythm and in such a case the venous pulse must be carefully noted. This is often visible in perfectly healthy persons, and is usually easily seen where the circulation is at all embarrassed. It is best seen in the supraclavicular fossa, in the location of the jugular bulb, as a rather slow dilatation of the vessels that occurs just before the apical impulse. It is to be distinguished from a transmitted arterial pulse by its location, often by its limitation to a distinct vein, and especially by the difference in time from the arterial pulse. Incidentally, it may be noted that the old test of obstructing the vessel and noting whether it pulsates above or below the obstruction, and other like tests, are confusing and of no value, on account of the free anastomosis, and from the fact that we are dealing with a filling up of the veins, on account of obstruction below and not with a true pulse. The best test is the time relation, and when that fails we can usually make out the vessel itself filling and emptying. In a large percentage of cases the pulse can be made out and its relations to apex and radial noted.

With this relation worked out, we are ready to consider the various types of arrhythmia and their recognition.

Arrhythmia may be due to disturbances of rhythmicity, of irritability, of conductivity, of contractility, and of tonicity—that is, to a disturbance of any of the functions of the heart muscle. We shall consider these seriatim.

1. *Rhythmicity*.—While usually the impulse to contract occurs rhythmically, there are cases where a congenital arrhythmia occurs. Children will show a disturbance of rhythm on slight provocation, and neuropathic adults not infrequently show such an arrhythmia. It is characterized by a perfect coordination of venous pulse, apical impulse, and tone and radial pulse. In any of the above the heart itself is perfectly normal, but the same type of arrhythmia may occur from organic disease of the heart, whether of valvular or sclerotic type. It may occur as a result of infectious diseases, especially in childhood, and should always be considered serious unless proven innocent, as may be done by the rest of the data obtained by a routine examination. The severest cases are those of so-called auricular fibrillation.

2. *Irritability*.—The second group of arrhythmias is that due to the ability of the heart to contract in response to other than the normal rhythmical stimulus. Such a contraction must occur at a point in the cardiac cycle when the heart is not already in systole or in the refractory stage following a normal systole. It occurs then just before the normal impulse, and is followed by a pause longer than usual, due to the next normal impulse finding the heart contracting or refractory, and contraction does not occur till the second normal impulse occurs. These contractions are known as extra-systoles and they may begin either in the auricle or in the ventricle. If the former, there is the normal relation between the venous and apical pulsations and the condition is to be

recognized only by the difference in spacing of the beats—a short pause between beats followed by a longer pause. As a rule, there will be a radial pulse corresponding to the extra-systole, since the ventricle fills with the auricular pulsation. Oftener, the extra-systole begins in the ventricle when it occurs before the venous pulse, as may be noted by watching both the apex and the venous pulse, and the apical impulse often has a peculiar flapping character, due to the ventricle contracting when relatively empty, not having been filled by the auricular systole. For the same reason, the radial pulse may skip a beat, there not being enough blood to fill the arterial tree, and the second tone is at times weak or absent. But the important thing is this: There is always a systolic apical tone. This differentiates it from heart-block, where the radial beat, apex and apical systolic tone are all absent, but the venous pulse is present. Extra-systoles may occur irregularly, or they may recur with every second, third or fourth beat, in the first case giving rise to the pulsus bigeminus, or, in case the pulse is absent, to a condition simulating partial heart-block, where every other beat is blocked. Where the second beat is weaker, the alternating pulse is suggested, the differentiation of which will be considered later. In many cases the extra-systole is perceptible to the patient as a flapping, and may excite apprehension. The causes of extra-systoles are many and various. They occur with any organic disease of the heart, and, on the other hand, they occur in gastro-intestinal and other abdominal lesions, in thoracic disease from toxins, especially, such as tea, coffee, alcohol and especially tobacco, and in persons of a neuropathic habit entirely apart from any pathologic process. In the latter they usually give rise to much apprehension on account of their subjective disturbance and are such a needless source of alarm that their mechanism should be freely explained to the patient, often to his great relief. The diagnosis of the cause of their occurrence is important and depends, of course, on the associated findings. It is worthy of special note that extra-systoles may be the direct result of digitalis, and when frequent and marked, are a sign that the limit of physiologic toleration is being reached.

3. *Conductivity*.—When the power of conducting impulses is lost, there results a condition already noted, known as heart-block. We recognize two forms—complete and incomplete. In the former there is no communication between auricles and ventricles, while in the latter a portion only of the auricular impulses are blocked. This may occur irregularly or every second, third, fourth and so on, may be interrupted or, again, only every third or fourth may go through, the rest being blocked. In complete heart-block the auricle beats at its own rate—eighty to ninety per minute, and the ventricle at its rate, which is much slower—from twenty to thirty per minute. Depending on the degree of block present there may be only an occasional beat missing, or a marked bradycardia. In any case the radial pulse corresponds to the apex, there being neither sound nor impulse for the blocked beats, while the auricular pulse is more frequent, being present at the time of the intermissions. If the venous pulse corresponds in rhythm with the

radial when it occurs, the block is incomplete, and it remains only to determine the proportion between block beats and transmitted ones. If the auricle and ventricle show no correspondence, the block is complete. It is possible to have a combination of regularly recurring partial heart-block and ventricular extra-systoles, when a diagnosis may be very difficult. It may be made known by watching the time relations very carefully. Subjectively, such extra-systoles may be perceptible as flapping beats. In any case of bradycardia attacks of syncope or epileptiform attacks may occur. The combination of bradycardia with attacks of syncope has been known for many years under the name of the Stokes-Adams syndrome. This syndrome has of late years been associated particularly with heart-block and the terms are often used synonymously. It is true that many cases of Stokes-Adams syndrome are due to heart-block, but there is no necessary relation between them, since syncope or epileptiform or at times apoplectiform attacks may occur in any type of bradycardia. They are due to transient cerebral anemia and, of course, occur especially in cases with cerebral arteriosclerosis, while, as a rule, the heart-block is due to arteriosclerosis involving the cardiac vessels. Heart-block has occurred also during or after certain of the infectious diseases, especially influenza and typhoid fever, but is most often seen in cases of syphilis when in some cases a small gumma has been demonstrated in the bundle of His and the complete interruption to the fibers has been demonstrated at autopsy. Within the last two months I have had two cases on my service at the Cook County Hospital, where in one only every fourth beat, and in the other only every other beat was perceptible at the radial. Both cases had been receiving digitalis for a period and the block disappeared three or four days after the drug was stopped. I have no doubt that in these cases the digitalis was responsible for the condition, and this occurs so often that bradycardia or arrhythmia occurring during the administration of digitalis should be investigated carefully. It may indicate vagus stimulation or it may just as well be heart-block. Which the case is, the venous pulse only will tell. There is probably no objection to pushing the digitalis to a degree sufficient to cause a block, but there is no excuse for continuing it after that stage has been reached. Heart-block does not necessarily offer a bad prognosis; the cases due to digitalis and those following the infections often recover promptly, but it is always important to note and deserves careful watching. The treatment is obvious. Where a possibility of syphilis is present, active treatment is advisable. In the other forms rest and the other usual measures are necessary.

4. *Contractility*.—The only important variation in rhythm arising from a disturbance of the power of the heart to contract is the so-called alternating pulse. This is a condition where every other beat is smaller than the preceding one, while the rhythm itself is normal. It may be confused with the bigeminal pulse when the extra-systole comes so soon after the regular impulse that the ventricle has not had time to fill and the pulse is smaller. The differentiation lies in the spacing, the bigeminal pulse coming in pairs close together, with a longer interval

between the pairs. The alternating pulse denotes failing muscular power and is of grave prognostic import. This abnormality, like the others, may occur from digitalis, and is an indication for withdrawing the drug.

5. *Tonicity*.—Lack of tone of the heart muscle results in dilatation and when occurring suddenly gives rise to a rapid running pulse, which may or may not be arrhythmic. In case arrhythmia does occur it would be of the same character and type as that occurring as a primary sinus arrhythmia, from which it cannot and need not be differentiated.

Arrhythmia may be due to a disturbance of more than one function of the heart muscle, such as has been noted above in the case of partial heart-block and extra-systoles. It may be very difficult and at times impossible to figure out such combinations. This is possible in any case only by carefully analyzing all of the factors involved and by fearlessly scanning the resulting data. It will often be necessary to give up any final solution.

It may be noted that an intermittent pulse is most often due to extra-systole and only very rarely to heart-block; in fact, the extra-systole is the most common type of arrhythmia that we meet.

The diagnosis of the type and cause of arrhythmia is a matter not only of academic, but also of great practical importance. Where an extra-systole is perceptible to the patient and has excited grave apprehension, it is well to be able to explain the matter to him and often it will be possible to relieve the condition, particularly when it is due to flatulence, or to some other pathologic condition that may be corrected. Often this symptom will bring a patient under observation at an early stage in the development of increased arterial tension when much may be accomplished by rational measures. In life insurance examinations arrhythmia is at times noted. While the medical directors do not always consider this finding enough to reject a risk on, it would help them in their decision to have a careful analysis of the type of arrhythmia present. The urinary findings and blood-pressure readings are of prime importance in these cases and should be made with especial care, while the possibility of a latent abdominal lesion is to be borne in mind. In the absence of any data pointing to a lesion, the possibility of a purely neurotic origin is to be emphasized, and in these cases the applicant deserves a favorable recommendation from the examining physician.

But of especial importance is the study of cases receiving digitalis, where the slow pulse at the wrist may be due to vagus stimulation, or it may be very misleading. In any case a note of the rate at the apex should be made and the venous pulse studied. Not infrequently you will find the ventricle beating much faster than the pulse indicates, and rarely the auricle will be found beating two, three or four times as rapidly as the ventricle. There is probably no harm in pushing the digitalis to a degree sufficient to disturb the rhythm, even to the production of heart-block, but any marked disturbance is a signal to stop or reduce the dosage, and for that reason should be carefully noted.

THE ROAD TO RATIONAL MEDICINE *

A COMPARISON OF MEDICINE AND ENGINEERING

E. P. LYON, PH.D., M.D.

Dean and Professor of Physiology, St. Louis University School of Medicine

In casting about for a subject which might be of interest to you, students of the Bradley Polytechnic Institute, I naturally looked in the field of thought to which my life is chiefly devoted, namely, medical education. It struck me that there are many points of resemblance between engineering and medicine. While many of you are not going into technical engineering, you are all interested in the material and mechanical aspect of things. I believe that this is right. I believe that an education founded on actual contact with the substances and forces of the world in laboratories and shops is more likely to help one to a sane and useful life than one founded on introspective or philosophic considerations. I believe that mind training should be founded on hand training. This does not mean that the languages and humanities should be neglected. Do not think that a "practical education" means carpentry or iron working or bread making only. The mind is the thing to be trained. Since Bradley Institute founds this training of the mind largely on contact with the material world, it seemed to me you would appreciate a discussion of medicine from the same standpoint. While you young people are for the most part healthy in body and in mind and, being healthy minded, think little of human ills, it nevertheless seemed not amiss to call your attention to certain fundamental facts in regard to our bodies and to the conditions under which these bodies carry on the activity we call life.

These facts constitute a "train of thought." And if you will permit a facetious turn of the metaphor, I am going to be conductor of this train, and you shall be the passengers. I hope that you will all agree with me in the statements I shall make. I hope, in other words, that you will stay on the train to the end of the journey, which I shall call "Rational Medicine." But it may be some of you will not agree with all that I shall say. I shall therefore stop the train from time to time to allow passengers to leave the cars. If you cannot agree with me, let us, at least, try to understand clearly, in the words of the street urchin, "Where you get off at!" For is it not true that the great controversies, misunderstandings and hatreds among men are due, not so much to the fact that they disagree, as to the lack of clear agreement where, how and why they disagree?

The first fact to be stated and the one which I shall make the locomotive to pull the whole train along is this: We, as knowing beings, become aware of things outside ourselves only through our senses. I do not know what I am, perhaps; but I do know that all I know about things not myself I have learned through the medium of my sense organs. I know that this is a desk because I see it. I know it is hard because I feel it.

*Founder's Day Address at the Bradley Polytechnic Institute, Peoria, Ill., Oct. 8, 1912.

I know that its surface is cold through my temperature sense. You know I am speaking from this platform because you hear me and see me. If I use a word, such as "sugar," you know what I mean because you hear it and associate the sound, "sugar," with a certain material which you have seen and touched and tasted from earliest childhood. If one of you had been born without the sense of taste, the word "sugar" could not mean the same to him as to the rest of us. All that you know of sugar, even if you know the latest chemical theories or the details of manufacture or the statistics of production, you know because you see, hear, feel, taste, smell.

Each of the senses is mediated in our bodies by a definite and fairly understood apparatus. There is always an end-organ. In the case of vision the end-organ is the retina, located in the eye. This end-organ is capable of being stimulated by some form of energy. In the case of vision the stimulus is light. There are nerve fibers connecting the end-organ with the brain, and along these fibers the messages or impulses travel. In the case of vision these nerve fibers are in the optic nerve. Finally, there is the brain itself (or some part of it), into which the messages are received and translated into that response in consciousness which we call sensation. It is a kind of telephone system in which the sense organ is the transmitter, the nerve fibers are the wires and the brain is the receiving station. And just as, in using a telephone, it is not the original voice of our friend that reaches our ear, but a secondary sound created by electric disturbances, which in turn were set up by the original voice; so, in the case of our senses, it is not the original stimulus that reaches our brain, but nerve impulses set up by the stimulus and quite different from it.

In every case, I repeat, in which I gain knowledge of the outside world, the process is the same. The limitation is also the same, namely, that which reaches the central station, myself, is not the thing to be known, but only an impulse or message aroused by that thing in one of my sense organs. I emphasize this matter because I wish you to understand that while our senses give us our only information about the world, they do not give us direct information, they do not give us complete information, and they do not in some cases give us accurate information.

The second of the fundamental facts is this: Whatever may be the relation between myself as a knower and the object called my body, all that I know about my body I learned in the same way that I learn about things outside of my body, namely, by my senses. I see my finger, as I see a brick, and by means of exactly the same eyes. I may feel myself (that is, my body) to be cold, just exactly as I may feel the chill of the brick and by means of the same sensory apparatus. If the brick drops on my finger, I may see a wound and see blood come out; but at the same time another sense comes into play, which tells me nothing at all about the brick, but does tell me my finger has been injured. This is the sense of pain. This sense tells me the condition of my body or some part of my body. Pain never tells me about anything except my body. But apart from this limitation, it is like the other senses. The nerve-endings of

the sense of pain are stimulated by injury or abnormal conditions; the impulses or messages pass along the nerve fibers of pain to the brain; the response in consciousness is pain, just as the response to stimulation of the retina is vision. And this sense of pain, like all the other senses, is limited by indirectness, incompleteness and at times by inaccuracy. But again let me repeat, this sense of pain together with the other senses constitutes the only means by which I can know anything about that very interesting and important object which I call my body.

Right at this point comes one of the most important "getting off" places; and I will pull the bell rope to allow some of you, possibly, to leave the train. For if you cannot agree with the two facts which I have developed in regard to the senses, you will not be able to agree with anything else in this address. If I say, "I see this desk," you may reply, "No, you do not see the desk. There is no desk." If this is your belief, I cannot prove *to you* that you are wrong or that I really do see the desk or that there really is any desk. I may say, "Why, yes, there is a desk. Come up here and feel it and lift it." You reply, "You only imagine you feel and lift it." Similarly, if I drop the desk on my foot and state that my foot pains me, you reply that I only imagine it pains me. "There is no pain. There is no desk. There is no foot. There is no body, no sense organ, no seeing, hearing, paining."

Logically carried out, this negation of the senses constitutes the belief of a number of good people who call themselves Christian scientists. For these people only "mind" exists. Matter is an hallucination and illusion.¹ For these people, if they follow their philosophy to its logical end, there is no earth nor sun; no sea nor solid land; no plants nor animals; no houses, lands, money nor other article of value; no friend, husband, wife nor child—for all of these are material objects, which they can know only by their senses. If they deny pain, which tells that the body is injured, they must deny the temperature senses, which tell that the body is warm or cold; they must deny vision, which tells us we have hands and feet. They must deny that there is a body or any other material object. If they deny one sense, they must deny all the senses. They must deny all objects, just as they deny cancer and cataract and typhoid and diphtheria, for these too are objects which we know only by our senses.

All that the rest of us can do is disagree. But the rule of the senses is so firmly fixed in the very being of most of us, that we cannot get away even when considering those people who deny their senses. And when we see these persons behaving as if they saw and heard and tasted and felt: when we see them behaving as if they were eating and drinking and

1. Quotations from "Science and Health." Ed. 1908.

Page 71. "Close your eyes, and you may dream that you see a flower,—that you touch and smell it. Thus you learn that the flower is a product of mind rather than of matter."

Page 73. "It is a grave mistake to suppose that matter is any part of the reality of intelligent existence."

Page 108. "I learned these truths in divine Science: that . . . the opposite of Truth—called error, sin, sickness, disease, death—is the false testimony of *false material sense*, of life in matter; that this false sense evolves, in belief, a subjective state of mortal mind which this same so-called mind names *matter*."

going on journeys and buying and selling and marrying and dying — when we see these things, we have difficulty in restraining our amazement. They ought not to blame us for this, because the rule of the senses has placed a seal on our thinking and on our language. We speak of common sense, meaning that which accords with the sense experiences of most people; we speak of sensible folk and sensible advice; we say a person has a sensitive nature; that he is in his senses; that he has good sense. Naturally, we find difficulty in applying these terms to people who deny the whole basis of sensation. To us these people seem enveloped in fantastic fog. To them we appear to exist in a world of "error." We and they can never hope to agree. Let us in friendly spirit agree to disagree. They leave our train of thought at this point. We must deny the basis of their philosophy; but at the same time we may cheerfully acknowledge the good influence which their belief exerts over their lives — a good not unmixed with evil, it is true; and a good for which we may hope to find a basis, not where they think they have found it, but in rational medicine, toward which we move.

Now we who believe that, in the main, our senses give us true knowledge will agree that all the objects about us have certain common qualities; for example, they occupy space and they have weight. We all agree in saying that these objects are composed of matter. The chemists demonstrate to our senses that there are some eighty distinct kinds of matter, which do not change one into another,² and which they call the chemical elements. The chemists further demonstrate that each one of the millions of material objects of the world is composed of elements, separate, combined or mixed together. Furthermore, we who believe our senses will acknowledge that the object we call the human body is composed of matter. It occupies space. It has weight. Whatever life itself may be, the body, whether living or dead, is matter. And here again the chemists show us, who believe our senses, that the body, whether living or dead, consists of certain of the same elements which exist in non-living objects. All the kinds of elements found in the body are also found in non-living objects.

We also recognize that the material objects of the world are not at rest. Many of the visible objects move all the time, or from time to time; and scientists tell us that the smallest particles of matter are in constant, very rapid vibration. These motions of matter, whether gross or minute, are expressions of various forms of energy, such as mechanical energy, heat, light, electricity, gravitation and chemical affinity. The world, as it appears to our senses, is a changing world. The changes are the interaction of matter and energy. Within our bodies and between our bodies and the outside world interact the same forms of energy that are observed in non-living matter. For example, the body produces heat; and this heat is of the same kind and obeys exactly the same laws as the heat of a fire or the heat produced by friction or the heat arising from absorbed solar radiations.

2. Overlooking, for the moment, radio-activity and the deductions therefrom.

These ideas, while only in recent years scientifically formulated, have always been intuitively recognized. The history of the human race may be built around the development of mechanical principles. Long before man recognized the relations of matter and energy, he had made practical use of them. The first savage who threw a stone or made a bow and arrow or bestrode a floating log or dugged the surface of the earth with a stick was directing the forces of Nature as truly toward human ends as he who sits at the switch-board of a Niagara power plant, or he who builds a Panama Canal. This mechanical aspect of history is largely concerned with the invention and development of machinery. A machine is any combination of material parts by which useful changes of energy as regards its direction, intensity and kind are effected. The dynamo is a machine by which mechanical energy is transformed into electricity. The gas engine is a machine by which the chemical energy of gasoline is transformed into mechanical energy. Each of these machines is a composite of simpler machines such as levers, wheels, springs, coils, pistons and valves. And each may be combined into still more complex machines. For example, the gas engine properly connected to a vehicle becomes an automobile, one of the most complicated and wonderful of human inventions.

Within the last century we have discovered a principle of such far-reaching importance as to be a conspicuous milestone, not only in human progress, but also on our journey toward rational medicine. This is the law of conservation of energy. Expressed in simple words, it is that you can get out of a machine only as much as you put into it. A machine can transform energy, but cannot create it. A machine is like a bank. You can deposit gold and draw out bills or silver. But you cannot draw out more than you deposit.

It must now be plain from the definitions and examples given that our bodies are in every respect machines. I say advisedly, "in every respect." For it is clearly demonstrable, if we believe our senses, that our bodies behave as all machines do, and that they do their work subject to the same limitations and under the same laws that other machines do. Whatever else our bodies are, they are surely energy transformers. Whatever life may be, it is surely conditioned by a continuous change of chemical energy into other forms. Whatever unknown principles may underlie its activity, the body obeys the fundamental law of conservation of energy just as truly as the dynamo or the steam engine. The body cannot create energy; it cannot destroy energy. It is a machine. This fact everyone must admit who believes his senses and who is familiar with even the elementary facts of chemistry, physics and physiology.

Consider now the complexity of this human machine. Levers, pulleys, ball- and socket-joints, sliding-joints, cutters, grinders, tubes, valves, bellows, pumps, pressure regulators, lubricators, springs, shock absorbers, lenses, vibrating reeds and resonators—all these familiar mechanical devices, to say nothing of much more complex ones, enter into the make-up of the machinery of the body. Compared with any man-made machine, the enormously greater complexity of the human mechanism

must be apparent to every intelligent person. And since we do not understand fully even the most simple machine, it must be expected that our knowledge of the human machine should be far from perfect. Indeed, when one considers the difficulties connected with this field of investigation — difficulties made greater by superstition and ignorant restrictions — the wonder is, not that we know so little, but that we know so much about this human machine. Is it not strange that we who pride ourselves as an enlightened people should put obstacles in the way of *post-mortem* examinations, by which alone preexisting symptoms can be associated with internal changes? Is it not strange that we should object to new methods of treatment of disease, when it is only by experiment that the doctors can extend existing knowledge? Is it not strange that, if some people could prevent, not even animals might be used for experimentation? Is it not strange that a man, who would expect his mechanic to make a most thorough examination of his automobile to find out the trouble, will object to a careful examination of his body by his doctor, and that he should feel that the physician should be able by a glance to tell what the matter is? These are types of the psychologic difficulties and legal restrictions to medical education and medical knowledge. It is as if Bradley Institute should say to engineering students, "Here is an engine, but you must not take it apart to see how it is built. Here is a dynamo that does not run right, and you must tell what is the matter without examining it."

If you will pardon this diversion, we will advance to a thought so simple that it seems axiomatic, which means only that it rings true to all who believe their senses. Machines get out of order. Parts become worn or broken or misplaced or lost. The mechanism may become clogged with foreign substances. Even the nature of the material may change, as when steel is weakened by crystallization. The more complex the machine, the more things there are to get out of order, and the greater the possibilities for trouble. The proper running of an automobile, for example, is conditioned on the proper adjustment and operation of at least eight distinct and separate mechanisms, each of which in turn is composed of many subordinate parts. There is the motor proper, the carburetor, the ignition system, the cooling system, the oiling system, the transmission system, the vehicle proper and the steering system. It is evident that the machine will not go right if one of these is out of order. Difficulty in one part may affect distant parts; for example, a clogged oil pipe may lead to a hot cylinder. It is evident that the failure of any one of four or five of these systems will stop the car altogether, though every other part be in good condition. Conversely, it is evident that if the machine refuses to go, the trouble may be in any one of the essential mechanisms. Finally the machine may either become so generally worn out as to cease to be serviceable, or it may fail altogether in some fundamental part. In either case it goes to the scrap heap, the burying ground of discarded machinery.

All these ideas can be applied to the human machine. It may get out of order. It may get out of order in many places. The degree of diffi-

eulty may vary. Difficulty in one part may cause some other part to operate badly. An inefficient heart, for example, may affect every organ of the body. Finally, if some essential part ceases to do its work, the whole machine will cease to work. We say the man dies.

Right here I must whistle for a station where some of you may wish to change cars. If you do not agree with what I have just said, but believe that the body can get out of order only in one place, here is "where you get off." And from this junction you can switch to "Osteopathy," if you think all diseases are caused by malformation or displacement of bones. Or you can go to "Mechano-Therapy" or to "Chiropractic," which are villages located in the same land of mental sterility. Parenthetically, I may add that I visited the town of Osteopathy, and found a repair shop where the mechanics treated all automobiles by rubbing the fenders. They claimed that all automobile diseases were due to maladjustment of the mudguards. It is needless to say that they met with some success; for any garage man will tell you that sometimes the trouble is in the mind of the owner, rather than in the machine itself.

The station where we have stopped our train is also the junction point for certain other interesting geographical centers. For example, if you believe there is a single remedy for all the ills of the body machine, you may go to some patent medicine village, where they cure heart disease, kidney trouble, appendicitis, cancer, gall-stones, bunions, epilepsy and worms — all with one "sovereign," or rather "dollar" remedy. Or possibly you wish to go to places called "Faith Cure" and "Mind Cure," which lie apparently not far from "Christian Science," but from which they are separated by the mountain range of the senses, for the faith curist acknowledges that there are ills to cure, while the good people of Eddyville claim that there is no disease nor anything to become diseased.

If all who desire to take the various side trips have left the train, let us continue our journey toward "Rational Medicine." Since the body is a machine and since it may get out of order, and since it is a very complicated machine and liable, therefore, to many kinds of disorder, several additional conclusions would seem to be justified. First, if the machine does not run right, it is of great importance to find out what is wrong. In medical language this is called diagnosis. It is evident that the more complicated the machine and the more hidden the mechanisms, the greater will be the difficulty of finding out what is the matter. Hence, we have the need of the man who knows more about the machine than the most of us know. Such men in the realm of inanimate machinery we call machinists or engineers; in the realm of animate machinery we call them physicians. You will acknowledge that such experts are necessary for both kinds of machinery. But here arises the practical difficulty. How are you to know that either the mechanic or the physician is competent? Unfortunately, there are incompetent doctors, illiterate doctors, dishonest doctors; just as there are incompetent, untrained and dishonest mechanics. There are also many competent and honest men in both occupations.

The selection of either a mechanic or a physician is a difficult matter. As regards physicians the state does something by examinations and

license, but the system is not perfect and many incompetents are legally entitled to practice. In the case of a mechanician you can trust considerably to the recommendations of his patrons, for the owners of machines know a good deal about them and about repairing them. But in the case of the physician the number of variable factors is very great; and the ordinary man knows so little of the human machine and what can be done with it that his opinion as to a physician's competency is of little value. More people select their doctor by the color of his eyes or the cut of his whiskers or the street he lives on than by any reasonable criterion. Then they wonder why there are so many "fakers" in the medical business. I have been discussing the basis of medicine from the standpoint of the material universe and the relation of the human machine to this universe. But this is not the standpoint from which people choose their doctors. They want, when they are sick, not a technician but a god. They look on medicine as a kind of magic and on the doctor as a superman who can relieve their ills by some mysterious potion or incantation. Consequently the personal factor becomes overwhelming, and the doctor is chosen on account of the faith they have in him, rather than from real knowledge as to his qualifications. Now you cannot get away from the factor of faith nor can you avoid the influence of personality. Both of these indeed are in a measure valuable as part of the mental attitude conducive to recovery. But important as they are, the faith and personality factors should be backed up, in choosing your doctor, by the same kind of intelligent judgment with which you choose a suit of clothes or an investment, or a chauffeur.

I shall indicate some of the tests which you may apply, acknowledging at the same time the inadequacy of any of them taken singly, and the difficulty of making a proper choice even when all possible information is at hand. First of all, it is easy for you to learn what school a doctor graduated from. A letter to the State Board of Health or to the secretary of the American Medical Association would give this datum. The Carnegie Foundation or the Council on Medical Education, or any well-informed educator would be in a position to tell the standing of the school. While there are exceptions, on the whole the graduates of the better schools are more competent physicians. Personally I would never employ the graduate of a low-grade institution, unless I knew that his medical education had been supplemented by wide additional study under competent direction. Second, you can consider postgraduate experience. It is easy to learn whether a doctor served as intern in a good hospital after graduation. (Do not, however, be misled by imposing certificates on office walls.) In a large municipal hospital the intern sees a greater variety of diseases in one year than the average practitioner does in twenty. Other things being equal, therefore, select the man with hospital experience. For obvious reasons the school training and postgraduate work are more important in judging a young or middle-aged doctor than an old practitioner. Third, consider evidences of continued scholarship. The physician in whose office you find a good library, with new books and journals, should be your choice over one who shows no evidence of reading

habits. Especially if you know that the one man uses his books, should this factor have weight in your choice. The same would apply, more or less, as regards the material equipment of a doctor's laboratory and office, although you should bear in mind the frequency with which an imposing lot of apparatus and instruments form the bait of the shyster and quack. Fourth, ascertain whether the doctor is a member of the societies of his profession. Although there are exceptions, on the whole the societies keep their ranks clean. The man who cannot or will not join is likely to lack somewhere in reaching the best standard of the profession. Fifth, never employ an advertising doctor. While there are doubtless exceptions, on the whole the advertising doctors are unscrupulous quacks, who prey on the credulity of the ignorant. Sixth, consider all the evidence you can get as to the reliability and integrity of the doctor in all the affairs of life. If you find he is honest to the last word and the last penny, this fact should have far greater weight than the report that he cured your neighbor's child, for probably the child would have recovered any way. Conversely, if you find that he does not pay his debts or cheats in business or lives irregularly, you may well be much more influenced against him than by the fact that someone died while under his care. In other words, place evidence of general probity above popular impressions of professional success. Seventh, study his general method of handling his patients. If he has the reputation of making careful and thorough examinations of his cases, choose him over the man who has the reputation of "telling what ails you just by looking at you." Beware of the man whose large practice leads to snapshot diagnosis, overconfidence and neglect of details. Finally, study the personal habits of your prospective doctor. In view of our knowledge of the causes of disease and the nature of infection do not select a slovenly doctor, nor a doctor with a dirty office. The alcoholic physician is as dangerous as the alcoholic locomotive driver. The drug fiend doctor is the prince of fiends.

The choice of a physician involves intelligent forethought on your part. If this is to be your method of selection, you must not wait until you are in dire need. You must choose your doctor as you would choose an architect for a new house or an engineer for your factory, for knowledge, skill, judgment and character. Only when doctors are rationally selected will incompetency and gross dishonesty be banished from the profession. Only then will rational medicine become the universal abode.

Rational medicine is founded on the recognition of the material nature of the universe and the material nature of man's body; on the validity of the senses, which tell us that the human body is a machine of unrivaled complexity; that it obeys the laws and is subject to the limitations of machines; that it can get out of order in a variety of ways and a variety of places; that some, at least, of these disorders can be corrected and that the nature of the correction must be appropriate to the disorder; that the recognition and correction of these disorders require knowledge, judgment and skill. If you acknowledge these facts, you can enter the realm of rational medicine. And as a citizen of this realm you will have certain beliefs and certain duties.

You will believe, for example, that there is only one kind or school of medicine. Rationally, if the remedy be what is scientifically demanded to correct the disease, there cannot be more than one school. You do not find two schools of automobile engineers, one of which puts half a gill of water in radiators, while the other fills them to the top. They all know how much is required, and they put it in. You do not find some mechanics who give a hot box oil and others who take away what oil is already there. It is the same way in rational medicine. You do not find any essential difference in treatment where the nature of the disease is known and the appropriate remedy has been discovered. Diphtheria, antitoxin; small-pox, vaccination; tuberculosis, fresh air; malaria, quinin—the one thing suggests the other just as surely and as rationally as empty tank suggests gasoline or hot bearing suggests lubricating oil or loose nut suggests tightening. On the surgical side these facts are even more apparent. A broken leg must be set, just as a broken drive shaft must be welded. A wound must be properly closed, just as a bursted tire must be properly vulcanized. A clogged intestine must be opened, for exactly the same reason that a clogged drain must be opened.

Formerly homeopathy was a narrow gauge road which led off from the main line. This was before either road had any rational foundation or destination. But just as fast as bacteriology and pathology have demonstrated the nature of disease and just in so far as pharmacology has demonstrated the action of drugs, and just in so far as specific remedies have been discovered, just so fast and so far do the schools of practice harmonize. The homeopathic road now runs so close to the regular route that you can shake hands between trains; and when the present rolling stock has worn out, we may confidently predict the abandonment of the narrow gauge route. (This is said with full recognition of the service it rendered in a pioneer period in forcing a correction of grades and improvement of the road bed of the main line.) Indeed, homeopathy and allopathy are at present merely words to conjure with, and poor words at that. Intelligent physicians of all schools use the means which have been found effective to cure disease. They differ in regard to points which cannot be put to the convincing test of experiment. These points are unimportant. The difference between the intelligent homeopath and the intelligent allopath is not greater than that between intelligent practitioners of either sect alone. These differences are of the same order as those to be found among mechanics or engineers, partly differences in technical skill; but more important than these, differences in powers of observation, knowledge, experience and judgment.

As disciples of rational medicine you must recognize the human origin and therefore finite limitation of medicine. It is limited, like engineering, on the one hand by the knowledge, judgment and skill of its professional workers and on the other by the nature of that with which they work. You cannot repair a machine, on the one hand, if you do not know what the matter is or if you do not know the remedy. On the other hand, you cannot repair a machine which is too old or too badly injured. We ought not to expect the impossible from doctors any more than from

engineers. Moreover, we ought doubly to respect the doctor, who unlike the engineer, cannot refuse, even when he knows his work is hopeless, but must stay by his patient to the end and extend the helpful sympathy of a friend, when he can no longer give material aid. Recognizing the similarity of engineering and medicine you will get away from the ignorant expectation that the doctor should know at sight what ails you, and you will conquer the false modesty which holds you back when the doctor wishes to make a thorough examination. Indeed you will go further and be inclined to doubt his skill if he omits such examination, for you will know that many obscure conditions can be diagnosed only by the most careful application of physical, microscopical and chemical tests. You will recognize too that medicine like engineering is a growing science. Knowledge does not come by inspiration, but rather is the slow growth of the observation and experience of men. Says Tennyson:

Science moves, but slowly, slowly
Creeping on from point to point.

So medicine grows and moves; and the physician, like the engineer, is constantly experimenting for something better. Like the engineer, too, the doctor is getting results. One hundred years ago the Brooklyn bridge and the appendicitis operation were alike impossible, and for the same reason, namely, lack of knowledge of the materials and forces of Nature. You who believe in rational medicine will assist its progress by advocating state aid for medical research, use of hospitals for teaching and investigation, free use of lower animals for experimentation, encouragement for human dissection, post-mortem examinations and all other means which tend to the growth and spread of medical knowledge. Why should the state of Illinois support a great school of engineering and do nothing at all for medicine? You as citizens of influence, whether men or women, will not allow this condition to continue.

Nor do your duties end here. Since medicine is engineering applied to the human mechanism and since this is the most complicated mechanism that we know, you must recognize that a high degree of education is necessary for those who enter the medical profession. You will agree that a highly complicated technical training is indispensable; that this technical training must rest on a broad knowledge of anatomy, physiology and pathology, and that these in turn are founded on biology, chemistry and physics. The experts tell us that a fair knowledge of the necessary facts and adequate skill in applying them cannot be gained by the average student in less than five or six years above the high school. As believers in rational medicine you will support high standards of medical education; you will urge your legislators to adopt such safeguards as will keep the ill-prepared out of practice. And I may drop you a hint right here that the Illinois laws need improvement in these respects.

As intelligent citizens of rational medicine you will know that just as a large part of the engineer's work is anticipating and preventing troubles in his machinery, so also a large and increasing duty of the medical profession is connected with hygiene, sanitation and the other branches of preventive medicine. Indeed the physician's service in the

actual saving of lives is much greater in this field than in attending the sick. This fact should influence you to two lines of action. In the first place, you should in every way assist those movements which aim to preserve the health of the people. You should support the Owens bill which will establish a national bureau of health. You should favor the use of government money in the interest of human health to at least the same extent as, for years, it has been used for the health of hogs and horses. You should favor compulsory vaccination and the medical inspection of school children. Secondly, recognizing the principle I have stated, you will not wait for your own body to get out of order. But from time to time, like the wise owner of an automobile, you will have your machine thoroughly examined for hidden defects. You will perhaps approach the wisdom of the Chinese, who are said to pay their doctors to keep them well, instead of paying for being cured.

So far I have pointed out similarities between medicine and engineering. There are also important differences. The human machine differs from dead machines in having very great capacity to repair itself. This is not wholly a difference in kind, for such machines as electric batteries may, to a certain extent, recover their power by resting (which means, by allowing time for certain chemical processes to go on). But in the living machine this characteristic is all important. Did you ever stop to think that the human body, on the one hand the most complex mechanism that we can conceive, on the other hand is so simple that a child can run it? It is true about all that the child need do is to supply his body with fuel and water. The machine does the rest. It is always recovering, always curing itself. Minute by minute it replaces the material torn down by the previous minute's activity. Hour by hour it removes useless waste. Day by day it destroys invading organisms that, if permitted to multiply, would poison and destroy the machine. That is why it is so simple that a child can run it; and that is why the doctor's work, so like the engineer's in many ways, nevertheless sharply differs from it. For this power of self-regulation in the human machine on the one hand makes the doctor's work easier; on the other hand, more difficult. Curing the sick is really a partnership arrangement between Nature and the doctor, with no book-keeping by which each may collect his share of the credit. In ninety out of one hundred cases of illness the body would cure itself without a physician. It is in handling the remaining ten cases that the doctor's knowledge and skill are important. Unfortunately not even the doctor can tell, sometimes, whether a given case belongs to the ninety or to the ten.

What the doctor does, for the most part, is to so arrange the conditions that the body may repair itself to the best advantage. Hence you see the foolishness of people who think a doctor is not doing anything unless he prescribes abundant medicine. The physician who tells you when to stop work or change climate, what to eat or avoid eating, deserves his fee more perhaps than he who fills you with nauseating concoctions or he who cuts out some offending part of your anatomy. Moreover, as I have already said, diagnosis is the most difficult part of

medicine. To become a good diagnostician requires far more knowledge, experience and judgment than are required by the merely dexterous surgeon or the merely competent therapeutics. Let me warn you, therefore, against that mistaken psychology which willingly pays a large sum for an operation and begrudges the family physician a modest honorarium. Which man saves your wife's life, the humble practitioner who, called to her bedside at midnight, recognizes an internal hemorrhage or the noted surgeon who an hour later ties the ruptured artery? I say the honors are even. And the compensation should be equal. A recognition of these facts by all people would do away with unnecessary operating and many other evils in medical practice.

Finally I bring you to the end of our train of thought, an observation car, if you will, from which the whole landscape of life's journey may be viewed. It is this: The body and the mind interact on each other. The condition of the body influences the mind. Abnormality of the thyroid gland, for example, causes a form of idiocy. On the other hand the condition of the body may be influenced by the mind. Pawlow showed that the mental condition of a dog affected the flow of its saliva. We all know that fear does the same in ourselves. Cannon showed that anger stops the motions of the stomach. We thus have a scientific basis for the cultivation of such a spirit as will rise above imaginary ills and even conduce to recovery from real disease. That the power of the mind over the body is limited, I must believe. But that no man can measure that power in an individual case I must also believe. Here we have the basis for suggestion, which knowingly or unknowingly every physician employs on his patients. Here also is the scientific basis for all that is good in Christian Science, psychotherapy and such popular treatises as Arnold Bennett's "Human Machine." That this power of the mind over the body can be cultivated is also a fact abundantly proven by human experience and by laboratory experiment. To the dwellers and the workers in rational medicine this cultivation of mind power should be the constant endeavor. "A sound mind in a sound body" was the ancient proverb. "A sound mind and a sound body mutually related, mutually interactive, mutually controlling," is the watch-word over the central station in the city of Rational Medicine. And over the portals are statues of Hippocrates and Aristotle and Galen and Avicenna and Vesalius and Harvey and Jenner and Long and Pasteur and Koch and Lister, and many more of the world's great thinkers and benefactors. And on the tablets of this city are inscribed the names of thousands of physicians who in all ages in honesty of purpose and humility of heart served humanity to the best of their ability. Not that they were or are perfect. Rational does not imply perfection. And round about this station are the dwelling places of millions of men who accept the universe and man himself as their senses dictate, who live sane and happy lives within the limitations which the senses indicate and who leave the rest to that kindly mother Nature, concerning whose ultimate origin, powers and object their senses tell them nothing at all, but in whom, nevertheless, under one name or another, they put their trust.

THE MEDICAL MEN OF TO-DAY *

GEORGE A. ZELLER, M.D.

PEORIA, ILL.

When asked by your toastmaster to participate in the oratorical part of this evening's program, he very courteously permitted me to select my own subject. In doing so I realized that I could not take up the medical men of the past without treading on the domain of Dr. O. B. Will, the necrologist, not only of this organization, but of the state society as well. So beautifully and considerately does he carry out the injunction "*de mortuis nisi nil bonum*" that those of us living are engaged in an eager race to see which can cross the dead line first and receive from his pen a eulogy that few of us would have pronounced on each other during life. May it be many years before he is again called on to perform that gruesome task.

I could not well choose for a subject the medical men of the future, for I am no prophet, and your penetration into the beyond is as keen as mine. Hence, I have restricted myself to the medical men of to-day. Justice could not be done the subject, however, without drawing for a moment on the past.

Ours is a God-given profession. The very creator was a physician, for, did he not breathe life into the first image of man, and did he not take from his side a rib and build from it a woman?

The Scriptures teem with allusions to the healing power, and the Savior went about laying on hands and healing the sick, and when one woman, too timid to enter the divine presence, "touched but the hem of his garment," she was made whole.

The earliest Grecian mythology deals with medical men, and out of it looms large the figure of Æsculapius, the God of Medicine, son of Jupiter and the progenitor, by seventeen generations, of the first real flesh and blood physician, Hippocrates. His life, several hundred years preceding the Christian era, is known and his writings are preserved and read to this day. Construct codes as we will, we cannot excel, in simplicity and directness, the Hippocratic oath.

A few centuries later came Galen, the great Roman physician and then came darkness and oblivion, which engulfed the scientific world for fifteen centuries. Scarcely a medical name illuminates the dark ages. There were poets in those days and some of the master hands of sculpture and painting gave to the world its greatest treasures during that period.

Architectural splendors were created and vandals destroyed an equal number, but no great medical name looms out of the darkness.

It was an age of superstition and incantations, and all there was of medical knowledge rested solely on the teachings of Hippocrates and Galen.

Then came the revival of the modern school of medical thought. John and William Hunter came down to London, the one famed in surgery

*Response at the Annual Dinner of the Peoria City Medical Society, Feb. 9, 1913.

and the other equally great in medicine. They departed from the custom of each great scientist retaining in secrecy his knowledge, gained from books and study, and began to impart it to others. Their example was followed in many lands and the eighteenth century witnessed a remarkable revival in medicine.

Jenner gave to the world his great discovery and the European capitals became the seat of medical learning as they are to this day.

Great masters multiplied. The dissecting-room was giving up the secrets of the human structure. Harvey was demonstrating the circulation. Beaumont and Fletcher the digestion. The laboratory was robbing mystery of its concealment. Simpson gave us the anesthetic and surgery was robbed of its terrors.

Later, and in quick succession came Lister, operating under the spray, healing by first intention and banishing laudable pus. I speak almost of the living presence when I allude to Lord Lister, for it was my privilege to follow him on more than one occasion when he was walking the wards of Kings College Hospital, London.

So rapid have been the advances in surgery that few of you knew that he was still living when you learned of his death only two years ago. But England knew it. The Crown knew it, for he had been knighted many years before, and at his death a tomb was opened for him in the temple of England's Great, and his was the last body laid to rest in Westminster Abbey.

Scarcely had he taught us the value of antiseptics, when Lawson Tait proclaimed asepsis and threw aside all germicides by sterilizing the operative field and everything that came in contact. Then came Billroth and Virchow and Von Liebig and Pasteur, and finally Koch; each a fixed star in the medical firmament. It would seem that with the passing of this brilliant galaxy, the last niche in the temple of fame had been filled.

They were the medical men of the past, and the profession could well have remained quiescent, and been content to live for centuries in the reflected glory of their achievement, as they did for two thousand years after Hippocrates and Galen.

Finsen permeates the tissues with light and banishes lupus, even while premature death had marked him for its own; and Roentgen visibly reveals to us the innermost recesses of the human body by means of his nameless ray, and Ricketts, giving us his life in Mexico in answer to the challenge to prove his theory of the transmissibility of Rocky Mountain fever.

Are there no more worlds to conquer? Have these men who have gone before absorbed all the earthly glory? Go ask the judges who awarded last year's Nobel Prize and they will say they gave it to one of the medical men of to-day, to Carrel, whose delicate stitching together of the blood-vessels may make it possible some day to assemble a human body from the dismembered fragments of others.

Does the crusade against the great international evil, syphilis, stop at mercury and iodids? Along comes Ehrlich with his mastery of synthetic chemistry and with a single application eradicates the disease.

And with all the clearness of diagnosis given us in the writings of Hunter and Ricord, we have to thank Noguchi and Wassermann for the unerring precision of the microscope as applied to the spinal fluid—two of the medical men of to-day. The Occident and the Orient meet on common ground in the quest of the unknown.

Does the work of Koch lag for twenty years because of the want of a living organism to destroy the bacillus which he discovered? All eyes turn toward Berlin to-day, awaiting the next announcement of Friedmann.

No, the door of opportunity is not closed. Two brothers found it ajar in an obscure town in Minnesota and the entire surgical world pays homage to the Mayos.

Do the French give up the construction of the Panama Canal because of the ravages of tropical diseases? Along comes Gorgas and builds it with mosquito netting.

I have said that no man can speak for the future. I have alluded to the past, but we dwell in the present, and so, with due reverence for those who have gone before and looking forward with even greater expectations to those who are yet to come, we can feel that those of our day and generation have nobly carried forward the banner of progress, and that the illustrious past is ably sustained by the *medical men of to-day*.

THE NEAL DRINK CURE

This alleged system of cure for inebriates, it appears, is now arranging to invade the state, after having conducted a hospital in Chicago for about two years. Agents for the concern recently appeared in Springfield and leased property in the best residence section, and announced they would conduct a branch of the Neal Institute. The residents at once got busy and protested against this institution, and at present writing it appears as if they would be able to prevent its location in this place. During the discussion at a public meeting, Dr. C. P. Colby showed up the character of the men conducting this enterprise by reading from the records of the *Journal A. M. A.* We understand Mr. Bruce, the proprietor, endeavored to minimize the hard facts brought out by Dr. Colby.

It appears that this concern will endeavor to invade other communities in the state, and if so, active steps should be taken to prevent successful locations.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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MAY, 1913

CIRCULATION OF JOURNAL PASSES 6,000 MARK

President Nickerson, at the beginning of his term of service, announced that one of the great objects of his administration would be to put the Illinois State Medical Society in the front rank as to membership and practical work for the benefit of the members. With the aid of canvassers from the American Medical Association and the secretaries of all local societies, this object has to a large extent been accomplished, and while it is not certain that Illinois will lead in membership all the state societies in the Union, yet it is certain that great work has been accomplished during the administration of President Nickerson, and the fact that 6,100 copies of THE JOURNAL are printed each month indicates the wide circulation not only in Illinois, but in nearly every civilized country in the world.

Contributors to our JOURNAL may rest assured that very few medical periodicals in any country exceeds ours in the number of copies circulated, and we believe that no other journal is read more carefully and conscientiously, and more appreciated than by our members and subscribers.

The society, therefore, comes to its sixty-third anniversary meeting in excellent condition as to membership and influence, and the attractions at the meeting are such that there should be a record-breaking attendance.

GRADUATES OF LOW-GRADE SCHOOLS AND THE CRIMINAL COURTS

Time and again during the past ten years when the name of a physician has appeared in the criminal courts we have taken occasion to look up the school of graduation of the culprits, and almost without exception have found them to be the finished products of low-grade proprietary medical schools.

On our desk one week recently was a clipping from one of the larger counties of the state stating that Dr. X., a graduate of a low-grade Chicago school, had been arrested, taken to the county seat and placed under bond on the charge of criminal abortion.

Another county reports that a certain Dr. Y. was a defendant in a suit following extraordinary gossip through the whole community. On looking up this man's record we found him not even a graduate, but practicing possibly illegally by the grace of the State Board.

A third clipping details the doings of a swindler from Chicago, who invaded the wilds of an intelligent (?) country community, and made dozens of farmers believe they were afflicted with an incurable heart disease and a fixed passion for signing promissory notes to pay the bearer on demand. We are unable to locate the school from which this pirate graduated. His name, or names, as given, does not appear in any directory.

All these scandals are not helping the medical profession in the eyes of the public. On the contrary, they are serving to degrade the reputation of all honorable practitioners, and lead the people to mistrust the entire body of physicians. Christian scientists, antivaccinationists and all the other enemies of the profession are quick to make capital out of such delinquencies.

Under all the circumstances it is quite remarkable that any one of reputation is to be found attacking the organizations which are working to improve medical schools and their output.

LEGISLATIVE INVESTIGATION OF MEDICAL MATTERS IN CHICAGO

Under the guidance of Lieutenant-Governor Barrett O'Hara, a committee of state senators has recently investigated several medical institutions in Chicago, and uncovered a state of affairs astonishing to the ordinary citizen. Among these were the National Emergency and Maternity Hospital and the National Medical University, all located at 1426 Wells Street, and conducted by L. V. Rogers, a Hahnemann graduate. For many years the diplomas of this school were recognized by the Illinois State Board of Health, although it seems recently the recognition has been withdrawn.

Associated with Rogers, as appeared in newspaper reports of the investigation, was one Dr. A. N. McCullough, said to be a graduate of the National Medical University, but whose name does not appear in the

official register of physicians. From the reports it would appear that the maternity hospital was little better than a baby farm.

Other institutions investigated were the Anna Ross Sanitarium conducted by Dr. W. F. Briney, and the Union Park Maternity Home, conducted by Dr. Chas. S. Wood, both graduates of the Bennett Medical College. It is said Dr. Briney admitted he had given physicians \$20 for each patient sent him. It is also said that Dr. Wood had disposed of one infant eight hours after birth. Wood said he spends \$600 a year advertising in fifteen medical journals.

Those readers who have not the newspaper accounts and wish a full account should secure a copy of the complete committee report when printed.

ANOTHER BILL OF INTEREST TO THE PROFESSION

House Bill 467, introduced by Mr. McCarty and referred to the Committee on Judiciary, is said to have the backing of the Chicago Surgical Society. It is called "A Bill for an Act to Promote the Science and Art and Regulate the Practice of Surgery in the State of Illinois."

SYNOPSIS OF BILL

Section 1.—No person to practice surgery or any branch thereof without license from State Board of Health.

Section 2.—Must be graduate of approved medical school and have been engaged in general practice of medicine for five years, *and* had internship in general hospital or studied surgery in American or foreign university one and a half years, *and* served as assistant to surgeon three years.

Section 3.—Written application to be made to State Board of Health for a license with fee.

Section 4.—State Board shall notify applicant to appear before a Commission for examination written in whole or in part.

Section 5.—President of each university in the state with medical department recognized by State Board of Health to nominate one member of Commission. Governor to nominate one member. Commission to prescribe rules and regulations for examinations and hold examinations.

Section 6.—Commission to certify successful applicants to State Board of Health which will issue license. Wilful violation of rules sufficient cause for refusal to certify.

Section 7.—Fees for examination and license, \$10.

Section 8.—Provides for reciprocity of license with other states and countries. Accepts examinations of U. S. Army, U. S. Navy and U. S. Public Health Service. (Excepts official duties of above services.) Prohibits others from practicing surgery without license.

Section 9.—Persons now licensed to practice must make application with fee of \$2 within year of passage of act; otherwise must take examination for license.

Section 10.—License forms to be determined by State Board of Health, and licenses to be signed by majority of members and attested by secretary.

Section 11.—State Board of Health may refuse to issue license to individual who has been convicted of criminal abortion, or has practiced fraud or advertised under names not his own, and may revoke licenses for same causes; provided, hearing before Board is given.

Section 12.—Members of State Board of Health shall receive \$10 per day for each day spent in duties imposed herein, and Commission shall receive not over \$5 for examination of each applicant passed on, providing that all compensation shall be paid from fees received by said Board.

Section 13.—Every license to be recorded in office of county clerk of county where licensee resides or practices. County clerk to keep list of licenses recorded. Book open to public inspection.

Section 14.—“Any person shall be regarded as practicing surgery, within the meaning of this Act, who shall perform any surgical operation other than that of minor surgery in family practice, or emergency surgery.”

Section 15.—Any person violating Act to “forfeit and pay to the People of the State of Illinois, for the use of the State Board of Health, the sum of \$100 for the first violation, and \$200 for each subsequent violation; the same to be recovered in an action of debt, etc.” Judge to commit to jail until judgment and costs are paid, not more than thirty days after first conviction, not more than ninety days for each subsequent violation.

Any person filing or attempting to file as his own, the license of another, to be deemed guilty of a felony and subject to punishment of forgery.

Section 16.—All acts or parts of acts in conflict herewith are hereby repealed.

DIVISION OF FEES

One of our prominent members in southern Illinois has received the following letter signed by one Emory Lanphear, who has been more or less active in the profession in St. Louis for several years. The member sending this without comment evidently resents the insult, especially the first statement made in the Lanphear letter, and who would not be insulted by being approached in such a manner. It is hardly necessary for us to warn our members against signing such a card as accompanies this letter, for if they have any tangible property it might cost them dearly before they are through with the American Hospital:

ST. LOUIS, Mo., April 28, 1913.

My Dear Doctor:—I know you believe in “division of fees” between specialists and general practitioners and I want to interest you in the American Hospital (headquarters of the American Polyclinic) on that basis. I would like to have you sign and return the enclosed card. If you never send a pay patient there will be no harm done; if you do, you will become part owner of a hospital which we are going to make the most popular in the Mississippi Valley. Please note the card states explicitly that you are to have 50 per cent. of all fees (exclusive of hos-

pital care, of course) received from your patients sent to our staff for operation or treatment. Hoping for an immediate and favorable reply, for which a stamped envelope is enclosed, I remain,

Most cordially yours.

EMORY LANPHEAR.

Capital Stock, \$50,000

Paid in, \$44,000

Cost of Property, \$56,000

AMERICAN HOSPITAL

ST. LOUIS, MO.

I hereby subscribe for two (2) Shares of Stock of the American Hospital, of the par value of \$10.00 each, and agree that payment for same shall be deducted from my share of the fee received from the first pay patient (or patients), I shall send to the hospital for treatment. It is expressly agreed as a part of this contract that I am to receive 40 per cent. of all fees received from my patients sent to the hospital, exclusive of hospital charges.

Card sent

Patient received

Card returned

Stock issued

.....M. D.

Address.....

Fee received:

.....

THE PSYCHOLOGY OF DISASTERS

At numerous points in the Mississippi Valley during the past sixty days disasters from wind and water have created conditions which greatly interest the medical profession. Exaggerated reports of these disasters were circulated throughout the entire world, and served to again demonstrate that the human mind is prone to exaggeration at such times. It is interesting to note the fact that the picturesque liar is especially busy during times of excitement. No little hardship was caused to the medical profession because of such reports. For example, such exaggerated reports of the disaster at Omaha reached the neighboring cities, and we learn that in Des Moines some sixty doctors and nurses were called from their beds and rushed to the western city, only to find that their help was not needed, and the time and money expended for the trip was useless.

Again at Dayton, the first reports of the disaster stated that not less than 5,000 had been drowned, and that there was great danger to those who remained from starvation and disease. It finally developed that the number of lives destroyed was not greater than at several other points, notably, Columbus, and the buoyant fitness of the American people was shown by their ability to care for themselves under most trying circumstances.

One of the persons to sacrifice his life at Dayton in attempting to save others was a major surgeon of one of the militia regiments.

At Hamilton it was reported that there was a great need of help for the doctors and subscriptions were called for in Cincinnati to render them assistance.

Dr. Mark Milliken of Hamilton contributed an interesting letter to the Cincinnati *Lancet-Clinic*, stating that while the doctors had lost

heavily, all but one were taking care of themselves and needed no assistance.

In southern Illinois, a scare regarding contagious diseases was circulated, which proved to be grossly exaggerated, and instead of 200 cases of small-pox reported at Roseclaire, only twenty-two cases were found of a mild character.

It is worthy of remark that few if any lives were lost in communities situated on the banks of the Ohio. This stream rampages every few years, and the natives take to the hills as soon as trouble begins. It was the cities located on smaller streams which had never before been dangerous that suffered. Nearly every life sacrificed at Delaware on the Olen-tangy would have been saved had the victims heeded the warnings of the officials.

From all sides we learn that the medical profession acquitted itself with great credit at all danger points, and proved the value of the presence of this trained class of citizens who are accustomed to meet emergencies firmly and intelligently, and to report conditions according to real facts and without exaggeration.

It would be a splendid thing for the entire community if they had a little of the discipline which is so widely prevalent in the medical profession, and which leads them to meet emergencies as they really are, and not as they might be. Usually the psychology of disasters borders on hysteria or even mild mania.

ALIENISTS AND NEUROLOGISTS

At a meeting of alienists and neurologists of the United States, held in Chicago, April 17, 18 and 19, 1912, under the auspices of the West Side Branch of the Chicago Medical Society and the Chicago Medical Society, a resolution was adopted to hold a second meeting in Chicago, June 24-27, 1913, and the following committee was appointed:

Dr. H. H. Moyer (chairman).....Chicago	Dr. C. H. Anderson.....Menard, Ill.
Dr. L. H. Mettler.....Chicago	Dr. H. C. A. Chester.....Menard, Ill.
Dr. W. A. Evans.....Chicago	Dr. E. Z. Levitan.....Peoria, Ill.
Dr. A. M. Corwin.....Chicago	Dr. Wm. A. Crooks...Watertown, Ill.
Dr. W. J. Butler.....Chicago	Dr. H. Douglas Singer, Kankakee, Ill.
Dr. Peter Bassoe.....Chicago	Dr. W. F. Lorenz.....Mendota, Wis.
Dr. Wm. L. Noble.....Chicago	Dr. H. A. Tomlinson...Wilmar, Minn
Dr. W. T. Mefford (secretary) Chicago	Dr. H. M. Cary.....Spring City, Pa.
Dr. Bayard Holmes.....Chicago	Dr. Theo. Diller.....Pittsburgh
Dr. Jacob Frank.....Chicago	Dr. John Puntton...Kansas City, Mo.
Dr. P. J. H. Farrell.....Chicago	Dr. Henry A. Cotton...Trenton, N. J.
Dr. Frank P. Norbury, Springfield, Ill.	Dr. K. S. West.....Cleveland
Dr. W. L. Athon.....Anna, Ill.	Dr. T. B. Throckmorton, Cherokee, Ia.
Dr. Sidney D. Wilgus...Kankakee, Ill.	Dr. Chas. Berstein.....Rome, N. Y.
Dr. H. B. Carriel....Jacksonville, Ill.	Dr. Albert E. Sterne....Indianapolis
Dr. H. G. Hardt.....Lincoln, Ill.	Dr. Chas. Read.....Kankakee, Ill.

MEDICAL FAKE ADVERTISING PROHIBITED

Senator Hurburg of Galesburg has introduced a duplicate of the Ohio law into the Illinois State Senate, which is directed at advertising doctors. We are sure the bill will have substantial support from the honorable medical profession.

The following is the text of this drastic legislation:

Section 1. Whoever shall advertise in any newspaper, publication, magazine, periodical, pamphlet, or by circular or form letter, or cause to be distributed any advertisements in any form whatsoever, to restore manly vigor, treat or cure lost manhood, stricture, varicocele, hydrocele, diseases of the genito-urinary organs, or any venereal disease, or to cure cancer or tuberculosis, shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine not exceeding \$100, or by imprisonment not less than one month nor more than six months, or both.

Section 2. Any owner or managing officer of any newspaper, publication, magazine, or periodical in whose paper shall be printed or published such advertisement as is described in this act shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine not exceeding \$100, or by imprisonment not less than one month nor more than six months, or both.

DR. JAMES A. EGAN

In the last number of the JOURNAL we mentioned the death of the late Dr. James A. Egan, who was secretary of the Illinois State Board of Health for over sixteen years, having served under four governors. Dr. Egan was an affable and agreeable man and an enthusiastic, energetic and efficient part of the administration which he served. He had an attractive personality and few men have had more enthusiastic followers. He had a kindly disposition and to his friends was generous to a fault. As a husband and father he embodied those exemplary qualities which made him the center of a beautiful home life. The writer of these lines has been frequently entertained at his home and enjoyed those delightfully human and strenuously generous attentions which it was always his greatest joy to bestow on his friends.

After a term of service in the United States Army he studied medicine at the Northwestern University Medical School from which he graduated in 1893. Almost immediately after graduation he was appointed to the staff of the department of health of the city of Chicago. Here his energy and enthusiasm attracted immediate attention and he was rapidly promoted.

Among Dr. Egan's conspicuous qualities were unusual affability of temperament and a willingness to work. He was a tireless worker wherever he worked and was an organizer of ability. He knew men, and by his keen observation and great energy succeeded to an unusual degree in leading them to do the things which he planned. These qualities soon attracted attention, and when there was a vacancy in the secretaryship of the Illinois State Board of Health his friends considered him the one man in Illinois with the requisite ability and training to fill the vacancy and he was appointed by Governor Tanner. Each succeeding governor evidently shared the confidence of these early friends and supporters and the hosts of others around him during his service, for each continued him in office.

During his incumbency many changes and improvements were inaugurated. Among the changes which marked his administration we would mention the many excellent pamphlets on contagious diseases and their

prevention, methods of disinfection, etc. The pamphlets on small-pox, tuberculosis and the care of the child deserve especial mention. These and others were profusely illustrated, which was in itself an innovation in public health pamphlets of the day. During his administration the Board established the monthly Bulletin; established the laboratories which are now a part of the Board's equipment; secured the passage by the legis-



lature of the bill which has given the citizens of the state free antitoxin for the treatment of diphtheria, secured the passage of the vital statistics law and established the bureau of vital statistics as one of the departments of the Board of Health, which, while not altogether satisfactory, was the best which could be secured at the time, and he continued to work for a more complete vital statistics law which would bring Illinois into the registration area. He secured the provision for reciprocity in

medical education and was largely instrumental in establishing the Board's present schedule of preliminary requirements for entrance to the study of medicine, as well as the schedule of minimum requirements for the medical course of study. These are among the things which consumed his great energy and mark the advances which he worked for in his department and for his state.

Like all public men, he met with opposition. This was particularly true of his work in medical education and licensure. Here he incurred the opposition of many of the strongest and most influential men in the state, but even this opposition was largely a revolt against a political system through which Dr. Egan worked, rather than a personal opposition. This will be shown by the fact that his untimely death will make little or no change in the force or character of the opposition which is really against an unjust and inefficient political system. Dr. Egan had the misfortune to be a part of this system which was essential to his continuance in office, and at the same time brought him many political and professional enemies. These same enemies could have been his staunchest friends under a more just political system.

PEORIA MEETING

As stated in previous issues of the JOURNAL, the annual meeting at Peoria beginning May 20, promises to exceed any other meeting yet held, in the character of papers to be presented and the scientific and social entertainment offered.

We understand that the Louisiana health train will be at Peoria at the time of the meeting, and this with the moving picture exhibit of nervous diseases will afford ample opportunity for instruction of the most valuable kind. The meeting hall and the hotel accommodations of Peoria leave nothing to be desired, and we are sure that large numbers of the members of the state society will be on hand to make this meeting a notable gathering in the history of the State Society.

PEORIA'S LEADING HOTELS

Jefferson Hotel, Horace Wiggins, Manager, 300 rooms. Rates, \$1.50—\$3, European.

Fey Hotel, E. A. Whitney, Manager, 175 rooms. Rates, \$1—\$3, European.

Mayer Hotel, Wm. Mayer, Manager, 200 rooms. Rates, \$0.50—\$1.50, European.

Niagara Hotel, C. S. Buchanan, 125 rooms. Rates, \$1—\$2, European.

Black's Hotel, Wm. Black, Manager, 40 rooms. Rates, \$0.50—\$1, European.

Faust Hotel, Fauser & Heitz, Managers, 60 rooms. Rates, \$0.50—\$1, European.

Majestic Hotel, E. B. Hutchison, Manager, 90 rooms. Rates, \$0.50—\$1, European.

Smith Hotel, Norman Smith, Manager, 100 rooms. Rates, \$2—\$2.50, American.

Lud Hotel, W. J. McGuire, Manager, 50 rooms. Rates, \$1—\$1.50, European.

Regis Hotel, R. N. Van Sant, Manager, 110 rooms. Rates, \$0.75—\$1.50, European.

Grace Hotel, P. M. Carney, Manager, 120 rooms. Rates, \$0.50—\$1.50, European.

Arion Hotel, Murray & Lang, Managers. Rates, \$0.50—\$0.75, European.

Knox Inn, C. W. Doll, Manager, 45 rooms. Rates, \$0.50—\$1, European.

INDEX TO TRANSACTIONS

The index appears with this issue and we desire to call attention of the members to copies bound in cloth, which will be in the hands of the secretary at the Peoria meeting, and may be exchanged for the copy you have on the payment of fifty cents.

Official Program

PROGRAM OF THE SIXTY-THIRD ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY, PEORIA, MAY 20, 21 AND 22, 1913

ORDER OF PROCEEDINGS

Registration office in the Exhibit Room in the basement of the Shrine Temple.

FIRST DAY. TUESDAY. AFTERNOON

- 2:30. Call to order of the Society in General Session in the Gold Room of the Jefferson Hotel by the President, L. H. A. Nickerson, Quincy. Report of the Chairman of the Committee on Arrangements. J. H. Bacon, Peoria.
- 3:00. Call to order of Secretaries' Conference in the Gold Room of the Jefferson Hotel. E. W. Oliver, Peoria.

FIRST DAY. EVENING

- 8:00. Call to order of House of Delegates in the Gold Room of the Jefferson Hotel by the President, L. H. A. Nickerson.

SECOND DAY. WEDNESDAY. MORNING

- 9:00. Call to order of Sections 1 and 2 for the reading and discussion of the papers of the program, in the Auditorium of the Shrine Temple.
- 9:00. Call to order of the Section on Eye, Ear, Nose and Throat in the Gold Room of the Jefferson Hotel. Willis O. Nance, Chairman, Chicago.

- 9:00. Call to order of the Section on Public Health and Hygiene, in the Auditorium of the Association of Commerce, opposite the Jefferson Hotel. J. W. VanDerslice, Chairman, Oak Park.
- 12:30. Adjournment for luncheon.

SECOND DAY. AFTERNOON

- 1:30. Call to order of Sections for the continuation of program.
- 2:30. President's address. L. H. A. Nickerson, Quincy.
Oration on Medicine. Joseph Collins, New York.
- 4:00. Meeting of the Medicolegal Committee in the Association of Commerce rooms. Harold N. Moyer, Chicago.
- 5:30. Adjournment.

SECOND DAY. EVENING

- 8:00. Boat ride on Steamer *Columbia* (capacity, 1,250) on the Illinois River. Dancing, quartette singing and refreshments.

THIRD DAY. THURSDAY. MORNING

- 9:30. Call to order of Sections 1 and 2 for the continuation of the program.
- 12:30. Adjournment for luncheon.

THIRD DAY. AFTERNOON

- 1:30. Reconvening for continuation and completion of program.
Oration on Surgery. Charles D. Scudder, Boston.
- 4:00. Call to order in General Session by the President to receive the Report of the House of Delegates.
Induction of President-Elect.
- 5:30. Final adjournment.

The Section on Eye, Ear, Nose and Throat will also hold surgical clinics at the St. Francis Hospital, on Glen Oak Avenue, at 2:00 o'clock, on Tuesday afternoon. Two operating-rooms will be used at the same time. (Take the Heights or Knoxville car and get off at Glen Oak Avenue and walk east.) This Section will also have a banquet on the evening of May 20, at 6:30 p. m., at the Creve Coeur Club.

The Health Train Exhibit of the state of Louisiana, under the personal supervision of Dr. Oscar Dowling, President of the Louisiana State Board of Health, will be located on Hamilton Avenue, between the Jefferson Hotel and the Shrine Temple.

The Chicago Tuberculosis Society will have an exhibit on the exhibit floor in the basement of the Shrine Temple, occupying 1,080 square feet of space.

LADIES' ENTERTAINMENT

Wednesday afternoon, at 2:00 p. m., the ladies will meet at the Jefferson Hotel and will be given an automobile ride through the city's parks, the State Hospital, out Grand View Drive to the Country Club, where light refreshments will be served.

PROGRAM

Section 1. FRANK P. NORBURY, Chairman, Springfield; J. F. CHURCHILL, Secretary, Chicago.

Section 2. STEPHEN C. GLIDDEN, Chairman, Danville; H. M. RICHTER, Secretary, Chicago.

FIRST DAY

1. Status of Vital Statistics in Illinois and Our Obligations. T. H. D. Griffiths, State Board of Health, Springfield.
Discussion of paper by C. W. Lillie, E. St. Louis; M. O. Heckard, Chicago.
2. A Country Surgeon's Experience in Stomach Surgery. J. W. Hamilton, Mt. Vernon.
3. Report of a Case of Transplantation of Bone for Ununited Fracture of the Right Tibia, with Remarks on Osteogenesis. J. E. Allaben, Rockford.
Discussion of paper by M. L. Harris, Chicago.
4. Sporotrichosis in Man. W. W. Hamburger, Chicago.
5. Operative Treatment of Ununited Fractures with Contracture of the Attached Muscles. P. B. Magnuson, Chicago.
6. Some of the Rarer Fractures about the Wrist Joint. D. B. Phemister, Chicago.
7. Auricular Fibrillation. Frederick Tice, Chicago.
8. A Clinical Research on the Surgery of the Upper Abdomen. A. D. Bevan, Chicago.
Discussion of paper by Frank Billings, J. B. Herrick and B. W. Sippy, Chicago.
9. The Early Identification of Tuberculosis of the Lungs. Sumner Miller, Peoria.
10. Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis, with Cases. E. A. Gray, Chicago.
Discussion of paper by C. A. Elliott, Chicago.
11. Three Score Years and Ten—and After. C. B. Johnson, Champaign.
Discussion of paper by T. J. Pitner, Jacksonville; O. B. Will, Peoria; D. W. Graham, Chicago.
12. Nephroptosis. W. E. Schroeder, Chicago.
13. President's Address, "Lifting the Mantle of Reserve." L. H. A. Nickerson, Quincy.
14. Oration in Medicine. Joseph Collins, New York.
15. X-ray Manifestations of Gastro-Intestinal Motility. C. A. Elliott, Chicago.
Discussion of paper by Carl E. Beck and H. E. Porter.
16. Operative Relief of Barrel-Shaped Chest of Bronchial Asthma, or Rigid Dilatation of the Thorax. E. Wyllys Andrews, Chicago.
17. An Experimental Study with Intestinal Suture Materials. G. T. Courtenay, Chicago.
Discussion of paper by Wm. E. Schroeder and H. M. Richter.

18. Heredity and Epilepsy — A Plea for the Colonization Treatment of the Epileptic. D'Orsay Hecht, Chicago.
19. Motion Pictures Illustrating Various Nervous and Mental Diseases. Theodore H. Weisenburg, Philadelphia.

SECOND DAY

1. A Simple Method of Preparing Catgut. E. M. Sala, Rock Island.
2. Treatment of Hemorrhage in the New-Born. Mark T. Goldstein, Chicago.
3. The Results in Abbott's Method of Treatment in Scoliosis. J. L. Porter, Chicago.
Discussion of paper by E. W. Ryerson and C. M. Jacobs.
4. A Consideration of Two Hundred Cases of Traumatic Injuries of the Abdomen. Frederic A. Besley, Chicago.
Discussion of paper by Wm. E. Schroeder and Clifford U. Collins.
5. Benzol in the Treatment of Leukemia. Frank Billings, Chicago.
6. Management of the Wound After Amputation of the Breast for Carcinoma. D. W. Graham.
7. Mitral Stenosis Complicating Pregnancy. S. E. Munson, Springfield.
8. Displacements of the Colon. Carl E. Black, Jacksonville.
9. Oration in Surgery, "Stenosis of the Pylorus in Infancy." Charles L. Scudder, Boston.
10. Obstruction of the Bowel. Clifford U. Collins, Peoria.
Discussion of paper by Allen B. Kanavel.
11. The Gold Chlorid Reaction (Lange) of the Cerebrospinal Fluid in Congenital Syphilis; a Preliminary Report. C. G. Grulee, A. M. Moody, Chicago.
12. Constrictions of the Duodenum. M. L. Harris.
13. The Physician and the Defective. C. B. Caldwell, Lincoln State School, Lincoln, Ill.
14. Motion Pictures.

SECTION OF PUBLIC HEALTH AND HYGIENE

J. W. VANDERSLICE, Chairman, Oak Park.

GEO. T. PALMER, Secretary, Springfield.

1. Milk-Supply of Smaller Cities and Towns. Walter W. Greaves, La Salle.
2. Country School Sanitation (by invitation). Francis G. Blair, Supt., Department of Public Instruction, Springfield.
3. Country School Sanitation, the Medical Viewpoint. Louis Becker, Knoxville.
4. Farm Wells. Prof. Edward Barstow, Ph.D., Director, State Water Survey, Urbana.
5. Vital Statistics and Water-Supply. Prof. Paul Hansen, B.S., Engineer, State Water Survey, Urbana.

6. Methods of Control of Tuberculosis. Sumner M. Miller, Peoria. Discussion opened by John Ritter, Chicago; E. W. Fiegenbaum, Edwardsville; J. W. Pettit, Ottawa.
7. The Louisiana Health Train. Under Direction of Oscar Dowling, President, Louisiana State Board of Health. The train will be located on Hamilton Street, and will be inspected by the Section. Demonstrations and lantern views will be shown.

EYE, EAR, NOSE AND THROAT SECTION, ILLINOIS STATE MEDICAL SOCIETY, MAY 20, 21, 22, 1913.

The meeting place for the section will be in the Gold Room of the Jefferson Hotel.

The banquet will be held the evening of May 20, at 6:30 at the Creve Coeur Club and the tickets will be \$2.00 per plate. An excellent menu has been provided.

Surgical clinics for the Eye, Ear, Nose and Throat Section have been arranged for, at the St. Francis Hospital, the afternoon of May 20, beginning at 2 p. m. Two operating rooms will be used at the same time, so that a continuous clinic will be held until all the cases are disposed of.

A reception of the Country Club and steamboat and automobile rides are a part of the entertainment provided by the general committee.

EYE SECTION

1. What Illinois Can do to Prevent Blindness. Chairman's Address Willis O. Nance, M.D.
2. The Rôle of the Tarsus in Trachoma. H. W. Woodruff, M.D.
3. A Report of the Examination of the Eyes in General Paralysis of the Insane, in a Series of Fifty Cases. Carroll B. Welton, M.D.
4. Operations for Glaucoma. C. A. Wood, M.D.
5. The Use of Hexamethylenamin in Ophthalmology. H. S. Gradle, M.D.
6. The Treatment of Trachoma with Special Reference to Expression and Friction with the Author's Ground Glass Rod. C. G. Darling, M.D.

EAR SECTION

7. The Subjective Test of Hearing. G. H. Mundt, M.D.
8. The Blood-Clot in Mastoid Operations. A. H. Andrews, M.D.
9. The Treatment of Nerve-Deafness. J. Holinger, M.D.
10. The Diagnosis and Treatment of Meningeal Complications of Suppurative Diseases of the Temporal Bone. Norval H. Pierce.

NOSE SECTION

11. Relation of Nasal Troubles to Catarrhal Condition of the Ear. G. W. Geiger, M.D.
12. The Etiology of Hypertrophic Rhinitis. J. A. Pratt, M.D.
13. Ventilation Rather than Drainage Essential for the Care of Sinus Disease, with Special Notes on the Antrum of Highmore. L. Ostrum, M.D.

THROAT SECTION

14. Dysphonia. R. C. Matheny, M.D.

THE SECRETARIES' CONFERENCE

E. W. OLIVER, President, Peoria.

E. B. OWENS, Vice-President, Dixon.

JENNIE LYONS, Secretary, Champaign.

1. Organization. L. H. A. Nickerson, Quincy, President of the Illinois State Medical Society.
2. A Booster Sermon. Rock Sleyster, Waupun, Wis., Secretary of the County Secretaries' Association of Wisconsin.
3. Cooperation. Alex A. Craig, Chicago, Secretary, American Medical Association.
4. Medical Jurisprudence and Malpractice. W. F. Burres, Urbana, Editor of the Original County Secretary's *Bulletin* in Illinois.
5. The Ideal Secretary. T. D. Cantrell, Bloomington, Secretary of the McLean County Medical Society.

"WAITIN' FOR THE ROBERT E. LEE"

Tuesday, May * * the twentieth,

The I - S- -M * * Society

Meets in * * Peoria

In the Shriners' Temple,

And they'll all * * attend * * the Secretaries' Conference —

All the county officers,

And editors of * * the bulletins.

'There's Farrell of * * Chicago,

Watterson * * Waukegan,

Parmley * * from Marion,

Coroner Ray * * from Cuba,

Then there's Solomon * * Jones * * up here * * from Danville—

Each and every one * * a SEC - RE - TA - REE.

CHORUS

See that shufflin' throng!

Doctors * * every one;

Each has his best * * gal * * real * * pal

Down on the brand * * new levee —

Fifty thousand dol * * lar levee. And we'll

Join that shufflin' throng;

Hear that music and song;

The steamer's great * * mate,

Moonlight on the river,

All aboard the COLUM - BI - A!

There's D. G. Smith * * of 'Lizbeth,

And 'Lizbeth Ball * * of Quincy,

Cantrell * * of Bloomington,

Blankmeyer * * from Springfield —

'Then there's Jennie * * Lyons * * here from * * dear old

Champaign;

The "Madison County Doctor,"
 Our Fiegenbaum from Edwardsville;
 And Owens * * from Dixon,
 Chapman * * Rock Island,
 Bower * * from Galesburg,
 Bennett * * of Litchfield —
 Then we'll all * * hail * * the Secretaries' Conference
 Of the I - S - M * * Soci * * e * * tee.

E. W. O.

Correspondence

OBJECTIONS TO SURGICAL BILL NO. 467

To the Editor:—First. It provides for two separate boards of licensure where there should be but one, and there already is one.

Section 2. The principle herein promulgated is not only ridiculous, but vicious, in that it provides that no license shall be issued to any person who has not engaged in the practice of medicine for at least five years. This principle carried to the limit of possibilities (which, no doubt, it would be with a precedent established), would be about as follows: At the next session the Internists would be seeking a commission and similar law, next would come the Obstetricians, Gynecologists, Urologists, Neurologists, Dermatologists, Ophthalmologists, Laryngologists, Aurologists, Proctologists, Gastrologists, Chiropodists and so *ad infinitum*, each seeking a special board and law providing that no license shall be issued to any person to practice on any of the above-named subdivisions of the healing art who has not been in general practice for at least five years. The absurdity of a college granting a diploma to a student after five years' attendance and special study in all these branches, and stating in the diploma that the party therein named is competent to practice medicine in the full meaning of the term, and then have a special board for each of the above-named organs, saying he cannot practice the art for which he has legally and amply qualified until a further lapse of five years, is obvious.

Section 9. Is retroactive legislation, cannot be enforced and is ridiculous on its face.

Section 12, lines 3 and 4, provide that said Commission shall receive a sum not to exceed \$5 for the examination of each applicant passed on by said Commission, while Section 9 provides that the 10,000 physicians now licensed to practice medicine and surgery in Illinois must come before this Commission and pay a fee of \$2 if they are to continue to practice surgery. This leaves a deficit of \$30,000, and no provision is made for making up the difference of \$30,000 that must result from such an arrangement.

Sections 12 and 15 are in conflict with the present law in that they specify that moneys paid for fines, fees, etc., shall be paid to the Board and for the use of the Board. House Bill No. 311, enacted in the Twenty-Seventh General Assembly, says that all fees, fines, etc., shall be paid into the State Treasury.

Next, Section 14. Major surgery requires no more skill than is required in the treatment of typhoid fever, and is not entitled to a special Board of Licensure.

Section 14, further. Major and minor surgery cannot be arbitrarily defined. There is no hard and fast line of demarcation between major and minor surgery by which it can be determined where one leaves off and the other begins. Again, family physicians are less likely to under-than over-do in the practice of surgery, which is not the case with the older men who frequently lose patients from shock where three or four operations are done at one time. Inexperienced men are likely to voluntarily refer work to more experienced men. In any event, neither experience nor legislative action will bestow a surgical conscience on men who do not possess it. The latter are sometimes quite as dangerous as men who are not specially trained.

This is a special medical act and contains most all the objectionable features of any or all the Osteopathic and Optometry bills introduced into the legislature in the last ten years.

The Public Relations Committee and the Illinois State Legislative Committee have held for years, and their position has been repeatedly approved by the Council of the Chicago Medical Society, that, regardless of the methods or limitation of the treatment employed, all practitioners are alike and should rightfully be alike before the law.

In fighting vicious medical legislation these committees have flooded members, and especially prospective members, of the legislature before the primaries with literature to the effect that in Illinois there should be but one standard for practitioners of medicine and surgery, regardless of the methods of treatment; anyone complying with that standard shall be granted a license to practice by whatever method he chooses.

In the card sent out to candidates for nomination before the primaries, a pledge was asked of the candidates worded as follows: "I shall at all times support medical legislation which is not in the interest of any special cult or school of practice. I shall vote to retain in Illinois a one Board supervision over all medical matters, that the examination for licensure shall be for all alike, whether they belong to the now recognized schools of medicine or have tacked on to their names some "path," "cult" or "ism."

Your Committee reports that the whole Bill is in conflict with the law and vicious in tone. That it would establish a dangerous precedent. The Committee recommends that the Council of the Chicago Medical Society go on record as being opposed to the passage of the measure.

The Committee further recommends that the Secretary of the Chicago Medical Society send a copy of these objections to the entire membership in the medical profession in Cook County and to the members of the Judiciary Committee of the House Forty-Eighth General Assembly, and that a synopsis, together with the objections to the Bill, be published in the *Bulletin*, and that a copy of same be published in the ILLINOIS MEDICAL JOURNAL and the Homeopathic State Medical Journal.

The recommendations of the Committee were concurred in unanimously.

PUBLIC RELATIONS COMMITTEE.

CHICAGO MEDICAL SOCIETY.

COUNTY AID TO HOSPITALS

RUSHVILLE, ILL., April 15, 1913.

To the Editor:—We are trying to get a hospital for Schuyler County located in Rushville, and expect to ask the Board of Supervisors for help. Could you give me a list of counties that have helped along this line and amount given in each case? We will greatly appreciate any information along this line.

Thanking you in advance, I am

Yours respectfully,

J. C. STEINER, Sec'y.

ERRATA

WAUKEGAN, ILL., April 23, 1913.

To the Editor:—Please note "Errata" in my article in April JOURNAL on "Preventive Medicine," as follows: Page 402, line 8, humanity misspelled; line 9, Great Physician should be capitalized.

Yours truly,

W. C. BOUTON, M.D.

RUSH COLLEGE PIN FOUND

EL PASO, ILL., March 31, 1913.

To the Editor:—I had handed to me this morning a gold "Rush 1897, Fiat Lux" pin, found by a track man at this place. I suggest that you advertise it in the next issue of THE JOURNAL.

Finder thinks he should have a small reward, as it is a valuable pin.

F. C. NICHOLS, M.D.

GOOD ROADS RESOLUTIONS

BLOOMINGTON, ILL., April 8, 1913.

The McLean County Medical Society at its last meeting, which was held at the City Hall at Bloomington, Ill., April 3, 1913, passed the following resolutions:

Resolved, That the McLean County Medical Society extend to the people of the state its hearty cooperation in their efforts to ameliorate, as soon as possible, this one of the many hardships to life in the rural districts, and which works a special hardship to the life of practitioners who have a rural clientele; be it further

Resolved, That the McLean County Medical Society indorse the platform of the Illinois Highway Association, adopted at Peoria, Ill., on Sept. 27, 1912; that we do everything within our power to assist the members of the General Assembly to put on the statute books of Illinois a good roads law; and be it further

Resolved, That these resolutions be published in the *Bulletin* of the McLean County Medical Society and the ILLINOIS MEDICAL JOURNAL, and that a copy of these resolutions be sent to every member of the legislature from McLean County.

Moved, seconded and carried that the resolutions be adopted.

E. MAMMEN,

C. E. CHAPIN,

J. WHITEFIELD SMITH,

Committee on Judiciary, McLean County Medical Society.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY

The April meeting of the Adams County Medical Society was held at Quincy. The attendance was good and many interesting topics were discussed.

The Osteopathic and Optometry bills which have been referred to the judiciary committee were discussed and by a motion which prevailed the secretary was instructed to write to the representatives from this district and voice the feeling of the Adams County Medical Society on said bills. Each one present felt that as a society and as individuals, we should do all in our power to prevent the passage of these two bills.

The resolutions on "good roads" offered by the Chicago Medical Society were adopted by a unanimous vote. A committee on resolutions on the death of our late member, Dr. J. B. Shawgo, was appointed. Those comprising the committee are Drs. Christie, Koch and Stine.

The feature of the afternoon was a paper by Dr. John A. Koch on "The Dry Treatment of Leukorrhea and Cervical Erosions." The doctor has traveled abroad several times and it was while on his last trip that he heard of this treatment. He uses it extensively in his practice and is very well satisfied with the results. We feel very grateful to Dr. Koch for this new treatment. After the discussion we adjourned.

BOND COUNTY

The Bond County Medical Society held its annual meeting in the Court House at Greenville, Ill., Jan. 9, 1913. After reading of minutes and report of officers, the election of officers took place when the following were elected for the ensuing year: president, H. D. Cartmell, Greenville; vice-president, O. C. Church, Woburn; secretary-treasurer, E. S. Clark, Greenville; board of censors, E. A. Glasgow, Mulberry Grove, A. M. Keith, Greenville, J. C. Wilson, Greenville.

PROGRAM

"Shall We Bid on Township Pauper Practice." J. C. Wilson. Discussion, Drs. Brown and Wilson.

"Syphilis." B. F. Coop.

"Shall We Do the Practice of Ministers Free?" K. B. Luzader. Discussion, Drs. Cartmell and Chittum.

"What Shall We Do with Members Who Cut Prices?" O. C. Church. Discussion, Drs. Coop and Glasgow.

The Bond County Medical Society held its meeting April 24 in the supervisors' room in the Court House at Greenville. The following program was rendered: "Treatment of Rabies," Dr. O. C. Church. "Prevention of the Spread of Contagious Diseases," Dr. E. S. Clark. "The Relationship of the Quarantine Laws to the Medical Profession from a Legal Standpoint," John D. Biggs, states attorney.

CASS COUNTY

The following officers were elected at a meeting of the Cass County Medical Society held April 8, 1913: president, D. S. Gailey, Ashland; vice-president, W. S. Taylor, Ashland; secretary-treasurer, J. A. McGee, Virginia; delegate J. G. Franken, Chandlerville; alternate, C. M. Hubbard, Virginia.

CHAMPAIGN COUNTY

The March meeting of the Champaign County Medical Society was held in the Commercial Club Rooms at the Hotel Beardsley, Champaign, Ill. Dr. George T. Palmer, president of the health department of Springfield, spoke on "The Diagnosis of a Sick City." He described the sanitary provisions that are in use in Springfield, and the sanitary survey perfected by his department there. Following this address a short business meeting was held for which twelve of our members remained.

Dr. V. C. Morton was received by transfer from the Peoria City Medical Society. Eight applications for membership were read: Drs. Houn and Branyan of Champaign, Munsell of Urbana, Harris of Ogden, Ricketts of Ivesdale, Brayshaw of Homer, Casto of St. Joseph and Bundy of Sadorus. These applications, when the formal blanks have been signed and returned, will be considered by the censors and will be ready for the society's vote at the April meeting. Certain phases of the ethical code were informally discussed.

CLARK COUNTY

Society met at the New Archer House, Marshall, Ill., April 10, 1913, at 2 p. m., after a sumptuous dinner furnished by the Marshall doctors for all the members.

Members present: R. H. Bradley, Burnside, Johnson, S. C. Bradley, Prewett and Weir.

L. J. Weir read a paper on "Diseases of the Kidney," closing with the following summary: 1. The work of the kidneys necessarily exposes their delicate tissues to many and varied irritations and infections.

2. Well marked or usually very vague clinical symptoms lead to the repeated urinalysis, showing albumin, casts and (or) a discrepancy in the amount and specific gravity of the urine, which urinalyses give the most reliable information in regard to the condition of the kidneys.

3. The kind or amount of kidney involvement is of lesser importance, the main question is, can the remaining kidney structure perform their function sufficiently well.

4. The final treatment of nephritis will be like that for consumption and many other diseases, prevention, but in the presence of the active inflammation we secure comparative rest to the kidneys and eliminate by other organs.

A thorough discussion followed, participated in by each member present. A motion was made and adopted creating a standing committee to cooperate with the Red Cross medical work, consisting of the president and secretary ex-officio and three members to be appointed by the president.

Officers for the ensuing year were elected as follows: President, J. Y. McCullough; vice-president, L. A. Burnside; secretary-treasurer, L. J. Weir; delegate, S. C. Bradley; alternate delegate, L. J. Weir.

The secretary-treasurer made a report for the past year as treasurer: Received of former secretary-treasurer, \$36.90; purchased stamps, \$3.00; balance in treasury, \$33.90.

As secretary: Number of meetings, 6. Names of members and number of meetings attended by each: H. V. Anderson, 1; R. H. Bradley, 2; Joseph Hall, 2; G. W. Prewett, 3; G. T. Rowland, 3; B. A. Ryneron, 0; J. Y. McCullough, 5; S. W. Weir, 3; S. C. Bradley, 5; T. H. Lewis, 2; L. J. Weir, 6; W. W. Bruce, 4; E. M. Duncan, 2; R. B. Boyd, 2; L. H. Johnson, 5; Edward Pearee, 4; J. W. Marlowe, 3; P. P. Haslitt, 5; S. A. Smith, 2; D. L. Wilhoit, 1; R. A. Mitchell, 5; L. A. Burnside, 4. Number of visitors, 7; largest attendance, 15; smallest attendance, 8; average attendance, 12.

The program committee report was read, discussed and adopted as the program for the ensuing year. Program of the Clark County Medical Society from June 12, 1913, to April, 1914:

June 12, 1913, Casey, Ill.—Subject, "Metastatic Infection." Dr. F. Buckmaster, Ellingham, Ill. Discussion, L. J. Weir.

Aug. 14, 1913, Martinsville, Ill.—Subject, "Typhoid Fever," S. C. Bradley. Discussion, E. M. Duncan.

Oct. 9, 1913, Martinsville, Ill.—Subject, "Infectious Diseases of the Urinary Tract," J. C. R. Wettstein. Discussion, P. P. Haslitt.

Dec. 4, 1913, Casey, Ill.—Subject, "Influence of Acute Colds on Respiratory and Intestinal Mucosa," D. L. Wilhoit. Discussion, T. H. Lewis.

February, 1914, Marshall, Ill.—Subject, "Prevention and Spread of Contagious Diseases," L. H. Johnson. Discussion, G. T. Rowland.

April, 1914, Marshall Ill.—Subject, "Dislocations of Elbow and Shoulder Joint," L. A. Burnside. Discussion, L. A. Burnside.

Society adjourned.

L. J. WEIR, Secretary.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting, March 19, 1913

A regular meeting of the Chicago Medical Society was held March 19, 1913, with the following program:

1. "Drainage of the Upper Intestinal Tract (Jejunum) in Paralytic Ileus." C. Hugh McKenna.
2. "The Value of Blood-Pressure Determination in Obstetrics." Frank W. Lynch.

Regular Meeting, March 26, 1913

1. "Demonstration of the Intravenous Administration." W. T. Mefford.
2. "The Rationale of Salvarsan Treatment." E. A. Fischkin.
3. "Neosalvarsan." K. A. Zurawski.
4. "The Wassermann Reaction." Frederick Baumann.

Regular Meeting, April 2, 1913

A regular meeting of the Chicago Medical Society was held April 2, 1913, with the following program:

1. "The Present Status and Limitations in the Use of Tuberculin." John Ritter.
2. "Tuberculin in the Treatment of Tuberculous Adenitis." John F. Golden.
3. "The Scope of Tuberculin." Robert Zeit.

Regular Meeting, April 9, 1913

A regular meeting of the Chicago Medical Society was held April 9, 1913, with the following program:

1. "Enteroptosis, Etiology and Treatment." Alex. C. Wiener.
2. "Scalp Wounds: Surgical Treatment." Charles H. Parkes.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

Regular Meeting, Dec. 17, 1912

A regular meeting was held Dec. 17, 1912, with the president, Dr. Joseph C. Beck, in the chair.

PRESENTATION OF CASES

Dr. Charles H. Long reported a case of atresia of the external auditory meatus due to furunculosis, of which a detailed report will be given at a subsequent meeting.

NASAL TUBERCULOSIS: RECOVERY

Dr. Otto T. Freer reported the case of a woman, aged 59 years, first seen May 28, 1912. At that time the affection had existed for five years. The symptoms consisted of nasal stoppage, with complete obstruction of the right nostril and partial closure of the left. Scabs formed on the septum and were cast off

and reproduced. In 1910, as the result of an examination of microtome sections in the laboratory of the University of Virginia, the condition was declared nasal tuberculosis. The nose was then repeatedly cauterized and the disease seemed checked, until the symptoms returned in March, 1911. The diseased area was again cauterized with nitric acid and the galvano cautery, and a perforation formed in the septum.

Examination of the patient showed exuberant granulations on both sides of the cartilaginous septum, these granulations nearly filling a perforation which lay about one-half inch above the nasal floor and in a vertical line with the anterior nasal spine. The anterior inferior part of the septal cartilage was softened so that the nasal tip could be readily depressed with the finger. Following the alar, cartilage granulations lined the external nostrils. There was a granulating area which covered the anterior end of the right inferior turbinate and an area of the septum opposite it.

On account of the involvement of the external nose, the condition seemed inoperable without great disfigurement, so the patient was referred to Dr. Adolph Hartung for x-ray treatment twice a week. A specimen was also excised from the border of the perforation and declared by Dr. Maximilian Herzog to be tubercular. Under the influence of the x-ray the granulations disappeared from the external nares and from the perforation in the septum, and the softening of the cartilage ceased to progress. The granulating areas on the inferior turbinate and the septum further back were not influenced, however, because of their depth in the nose, so that on June 8, 1912, the right inferior turbinated body, which was tubercular throughout and was softened into a mass of spongy granulations, was extirpated, while the area opposite it on the septum was cut away to the bare cartilage and bone. Healing took place rapidly, and at the present day, December 23, all evidence of disease has disappeared from the nose.

The history of this patient shows that an inoperable case of nasal tuberculosis may be brought into a condition where operation is possible by the use of the x-ray. Its effect in this case confirms the experimental findings of Professor Brünings of Jena, who proved, after producing inoculation tuberculosis in the larynges of animals, that the x-ray is more effective in the treatment of local tuberculosis than intense light.

Dr. Freer also referred to a case of nasal tuberculosis in which he had extirpated the entire ethmoid labyrinth on the right side, the right middle turbinate, a large portion of the covering of the septum on the right side and a tubercular tumor from the posterior border of the vomer in 1907, the patient making a complete recovery. (This case was reported in the *Annals of Otology, Rhinology and Laryngology*, March, 1910.)

TOTAL RESECTION OF SUPERIOR MAXILLA FOR CARCINOMA

Dr. Joseph C. Beck presented a fresh specimen of a case of total resection of the superior maxilla for carcinoma, beginning several months ago as an epulis. The patient was a man, aged 44 years, otherwise in a healthy condition; there were no glands in the neck as yet infected with cancer. Preliminary exposure and compression of the external carotid artery was performed. The typical Langenbeck operation, with few modifications, as curettement of the ethmoid cells, was carried out. The anesthetic was ether by vapor, carried down into the larynx. There was very little bleeding present. A large defect of the cheek remained, owing to carcinomatous involvement of this structure. The patient was returned to bed in good condition. The gross specimen shows clearly on section the presence of carcinoma, and a previously excised piece on microscopic examination also proves it to be an alveolar carcinoma.

The point Dr. Beck wished to make was that all these carcinomata should be operated on, especially so long as a patient is in good general condition, and especially if the glands in the region are not metastatically involved; and if they are, they should be removed *en masse*. The mortality is great, recurrences frequently occurring, but if only one case in every twenty-five is saved, it may be said to be a percentage of 100, since without operation they all die.

TECHNIC AND AFTER-TREATMENT OF RESECTION OF THE SEPTUM WITHOUT PACKING

LOUIS OSTROM, M.D.
ROCK ISLAND

The author prefers to have the patient sitting up during the operation. There is less bleeding and the patient can assist in blowing his nose, etc. He is less fatigued with the patient upright than when operating with the patient in the recumbent position, and the position seems more natural. The average time required for the operation is forty-five minutes, including preparative operation and immediate after-care. Many cases have been completed in fifteen minutes; some few cases have taken two hours.

Time of Operation.—Usually between 7 and 9 a. m., so that the patient may have a full meal in his stomach; the general effect of the cocain is less disagreeable, and if anything should arise demanding our attention, all day is at our disposal.

Anesthesia.—Flake cocain is used alone, applied three or four times in small quantities, until the tolerance of the patient becomes manifest. When the patient is fully anesthetized and not sick from cocain, and everything ready for the operation, adrenalin is used. In all his experience he has had practically no bleeding during the greater part of the operation, unless adrenalin was used too early. It takes a little longer to get started, but saves time in the end.

Technic.—The primary incision is made about vertical, one-third to one-half inch long, pointing down toward the middle of the incisor crest. This primary incision in the mucous membrane is made at right angles to the surface. The elevation of the mucous membrane is made by first scraping or pushing the perichondrium from the cartilage, so that the cartilage is distinctly visible within the primary incision. The mucous membrane is then elevated backward above the vomerian crest and up to the upper border of the deflection. With his right-angled elevator (made for him by Ermold of New York in 1903), he elevates the mucous membrane up to the roof of the nose below the bridge and forward to the primary incision. The primary incision is then extended upward to near the roof of the nose, then down to the incisor crest and cut about one-eighth inch across the floor of the nose down to the bone (Mankauer). The periosteum above, below and over Jacobson's cartilage is separated from the bone and cartilage with Stevens' dull-pointed tenotomy scissors bent on the flat, the points of which hug the bone and cartilage and cut the fibrous tissue connecting the periosteum to the sutures at the incisor crest in the region of Jacobson's cartilage. This dissection with Stevens' scissors is continued backwards to the posterior end of the incisor crest, when a dull, narrow elevator can elevate the mucous membrane on the floor of the nose adjacent to the septum, then upward on the septum up to angle of deflection on to vomerian crest. The mucous membrane over the crest or ridge, or spine, is then elevated from behind forward, or this process is left until the bony septum is cut above and below. The edge of a sharp ridge can be cut off with Stevens' scissors and left adherent to the mucous membrane, thus avoiding tedious dissection and possible perforation.

The incision in the cartilage is about one-sixteenth of an inch back of the incision in the mucous membrane, but in the same general direction, but an angle of 45 degrees to the plane of the septum, and only about one-quarter to one-third inch long. One finger is placed in the opposite nostril behind the incision, and pushes on deflection so that the incision in the cartilage gapes.

The point of a blunt-pointed elevator with the tip bent on the flay is pushed into the incision of the cartilage, and while pushing against the cartilage anterior to the incision with the bend or heel of the elevator, the tip is directed against or toward the cartilage of the septum (never against or toward the mucous membrane), and as soon as the tip of the elevator disappears from view the finger in the concave nostril feels the elevation. At this point ocular inspection must

take place to be sure that the septum was not perforated, cut or torn. The elevator is then pushed backward, elevating the mucous membrane backward, up and down as much as it can. The author's right-angled elevator is then used to elevate the mucous membrane from behind forward, first above, then below, down to the floor of the nose. The incision in the cartilage is then prolonged upward to one-quarter inch from the bridge of the nose and downward to the crest. Remembering that the fibers connecting the vomerian sutures to the periosteum and perichondrium run out and back, by pulling forward these fibers guide the instrument in against the bone, and no matter how scarred or adherent or grooved the concavity of the septum may be, the right-angled elevator separates the mucous membrane from the bone and sutures, away down to the floor of the nose, as far forward as the anterior end of the incisor crest, with no likelihood of perforation.

Ballenger's swivel knife is used to cut the cartilage above, accurately guiding it to cut upward parallel to the bridge of the nose, one-third inch from the upper border of cartilage of septum or bridge of nose. The rest of the cartilage is removed in one sweep. The bony septum is removed with Killian, Grunwald or any other forceps or punches which one may prefer. The maxillary crest is removed with gouge, chisel or punches.

Usually two black silk sutures are placed in the mucous membrane, one in the middle and one at the angle on the floor. A plug of cotton dipped in paraffin-vaselin is placed over the incision. This can be removed and renewed as desired.

CONCLUSIONS

1. Hematoma does not occur if there is free drainage, and all blood will escape from septum in from two to five days, usually after the third day.

2. In case of infection, drainage is already prepared for. He has had no infection of the septum.

3. Hemorrhage cannot take place unless the mucous membrane is so mutilated that an open wound is produced.

4. Packing cannot be placed uniformly on the septum; usually the upper one-half or one-third is never packed. (His observation at all clinics and numerous operators.)

5. Pain follows removal of packing.

6. Hemorrhage may take place when packing is removed, compelling repacking.

7. General sinus infection and severe pain usually follow packing.

8. Mucous membrane of turbinates may be injured by pressure from packing, and especially on its removal.

9. Hematoma often occurs after removal of packing.

DISCUSSION

Dr. E. Fletcher Ingals is not in sympathy with removing so much of the septum as is usually done. If bone and cartilage were not needed, they would not have grown there in the beginning. The idea of removing as much of the bone as possible without having the nose fall in is a mistake. The less bone removed, the better for the patient. He had seen many patients on whom this had been done, but he could not recall any in whom there was a firm septum. He thinks that usually if the bent portion of the septum above the most prominent ridge of the spur is retained, it is much better for the patient. In very many cases this portion of the septum is nearly half an inch in width; it can be taken out much more easily than it can be retained, but he thinks it better for the patient to leave it. The same principle should apply to the cartilaginous septum. He thinks that usually much more of it has been removed than necessary.

Regarding the author's results from not packing, they seem to have been excellent. Dr. Ingals thinks that packing, in the majority of cases, is a necessary means of safety. If no opening whatever is made through the mucous membrane on either side except the one directly in front, he has no doubt that clotting will usually, perhaps always, stop the hemorrhage, unless the patient happens to be a bleeder.

Dr. Ingals then stated that he wished to present to the society an efficient and easily removable nasal packing, for, notwithstanding the fact that many patients who have suffered operations in the nares might go to their homes without packing and escape serious hemorrhage, yet in many bleeding that alarms the patient comes in spite of the packing. In a considerable number, bleeding that is alarming to the surgeon comes on, and in a few fatal hemorrhage has occurred; therefore, he believes that for many reasons careful packing of the nares should be made in most cases after cutting operations on the septum, turbinated bodies or accessory sinuses. Sometimes packing is required after the removal of mucous polypi, but usually it is not necessary when only a snare has been employed. While in a large number of cases, without packing, no serious hemorrhage would occur after the usual operations, it cannot often be desirable to waste even 2 to 4 ounces of blood. General surgeons prevent all bleeding if possible, and their reasons for doing so would largely be valid in intranasal surgery; therefore, he cannot think we are justified in subjecting patients to the risk of bleeding. Usually bleeding would not occur for several hours after the operation; then, if the patient had gone home, he would at least be likely to be greatly alarmed. It seems to him unfair to subject the patient to this distress, aside from the first injury resulting from the loss of blood. If there were no other reasons for packing, the peace of mind and comfort of the surgeon make it well worth while. Often the parts are in such condition that packing is necessary to hold them properly in place.

He has known of several very alarming hemorrhages after intranasal operations, in which the patient's life was saved only by prolonged and persistent treatment, much of it very painful to the patient, and he has known of two or three fatal results. One of these occurred in his own practice, the patient dying from the effects of secondary hemorrhage, although he had stopped the flow thirty-six hours before this sad termination.

The only objections that he can see to packing of the nares after cutting operations are (1) obstruction of respiration; (2) pain from pressure; (3) prevention of the escape of pus, and (4) pain from removal.

The obstruction of respiration cannot be considered a real objection because usually the patient has already become accustomed to this inconvenience, and even if packing were omitted, swelling of the tissues resulting from traumatism would usually stop the nares.

Pain from pressure is a serious objection if the packing is too firm. The surgeon's experience must guide him to get the right amount of pressure; and he should make provision against pain by suitable analgesics. He is accustomed to give the patient 5 or 6 doses of 5 grains each of phenacetin, directing one every hour for four or five hours, if required for pain. At the end of this time, if the pain is still troublesome, or if the patient is nervous, as he is likely to be from the cocaine, he gives him half a grain of codein, and has the dose repeated in two or three hours, if needed.

Purulent discharges after operations for infected sinuses will almost necessarily occur, and if the nares is firmly packed, the pus may be forced back, so as to cause infection of other parts. This danger cannot altogether be avoided, but it should be guarded against by removing the packing as soon as the danger of hemorrhage has passed. Usually the packing may safely be removed within from sixteen to twenty hours.

Pain caused by removal of the packing is by far the most serious objection to its use. To avoid this, various methods have been adopted, most of which fall very short of the desired result, as can be appreciated only by those who have themselves suffered from the operation. The same remark would be applicable to the dressing after a large percentage of operations, and he feels that there is no one thing in which surgeons are so remiss as in their failure to prevent suffering at such times.

He has tried many different dressings after intranasal operations designed to prevent secondary hemorrhage and avoid pain at the time of their removal. The

most satisfactory one is made of rubber sponge, the form of which is peculiarly adapted to favor coagulation of blood. It is made of rubber sponge, preferably about 4 cm. thick, and from 5.5 cm. to 8 cm. long. In preparing the packing the sponge is grasped tightly and compressed between the blades of a long strong forceps, like Pean's hysterectomy forceps, 10 inches long, or like the speaker's straight esophageal forceps. The blades are closed tightly as possible, and locked by the catch on the handles. Then the sponge is trimmed off with scissors close to the blades. When the blades are opened, the sponge at once expands, and we have a piece of rubber sponge which should have been cut to about 2 mm. greater in thickness than the extreme width of the naris we wish to pack, while the tissues are shrunken down with cocain and epinephrin. The edges of this piece are trimmed down so that it will fill the naris vertically, and when there is fear of hemorrhage far back, the distal portion of the sponge should be left about 2.5 cm. longer and about 5 to 8 mm. less in height (width). This is done so that this portion, after being pushed through the naris back to the pharyngeal wall, can be drawn forward to plug the choana. For this purpose the whole piece should be about 8 cm. long, whereas if only the naris requires protection a piece 5.5 cm. in length will be long enough. It is important that this sponge be not too thick, otherwise, in spite of its softness, pain will be caused by the constant pressure that it will exert. The sponge having been fashioned to fit the naris, a strong linen thread is passed through from above downward, about 1.5 cm. back of its proximal end, and the two ends of this thread are tied together, so as to form a loop about 4 cm. long, by which the sponge may be withdrawn. To prevent the sponge from being torn apart in removal, a similar thread is sewn through and through from before backward at the upper and lower part of the packing, and this is tied in front of the thread passed vertically in forming the loop for extraction. Thus prepared, when the loop is pulled on, all the sponge will have to come with it. When it is desired to plug the choana more carefully, the long piece of rubber is used. A strong thread is passed through the sponge about 4 cm. in front of its posterior end. This is then fastened to the posterior end near one edge, and by sewing over and over along the posterior end to near the other edge when the thread is carried forward and through the sponge at the same distance from the posterior end as the other end of the thread. The two ends of the thread are then tied together, forming a loop about 7 cm. long, which, when pulled on, will double the back end of the sponge on itself and draw it into the choana. When the packing has been made ready, it is rolled up, compressed tightly and immersed and allowed to expand in a strong solution of formalin. While thus immersed it is alternately compressed and allowed to expand until the solution has permeated every part. It is then allowed to soak in the solution until fully sterilized and then is washed thoroughly in sterile water. It is then ready for use. In introducing this packing it is grasped firmly between the blades of a strong forceps shaped like the ordinary ear forceps, but the blades should be about 4 inches long and there should be a catch to hold them together until the surgeon is ready to detach them. The mucous membrane is then smoothed down and long thin spatulas introduced on both sides of the naris to prevent too much friction as the sponge is crowded in. With the forceps the packing is then pushed back as far as desired, the forceps are released and the sponge expands to its full size. Something is then placed against the anterior end of the sponge to prevent it from being pulled forward and the forceps and spatulas are withdrawn. It is usually best to push the sponge back somewhat farther than it is to be left, and later draw it forward to the desired position. A pledget of cotton is then placed in the nostril and the patient may go home confident that there will be no serious bleeding. If it has been a case where the choana was to be specially packed, while the sponge is held back by something pressed against its anterior end, the longer loop is pulled on, whereby the posterior end of the sponge is doubled on itself and drawn into the posterior naris. After fifteen or twenty hours this packing may be withdrawn, often with no pain, and always with much less than caused by other packings that he has tried. When for any reason a large packing has been put in and traction on the loops for removing

it causes pain, the patient may be given a few whiffs of chloroform or some other anesthetic, and then the packing can be pulled out quickly. For this purpose he uses chloroform in the following manner: In the bottom of a 2-ounce, wide-mouthed bottle he places a sponge that will about one-third fill it, and on this pours a dram of chloroform. The patient holding this in his hand places the mouth of the bottle between his lips and breathes deeply at the rate of about thirty respirations per minute, until he begins to feel the effects of dizziness or a sense of losing himself. Then the surgeon, who has hold of the loop, pulls the sponge out in about a second, without causing pain. The patient immediately recovers from the chloroform. There is no possible danger from using chloroform in this way for the patient would drop the bottle before becoming unconscious or taking too great a dose. Holding the bottle in the hand in this way warms the chloroform and assists in its rapid vaporization.

In cases when for any reason he has had reason to fear hemorrhage, he has rubbed on those portions that would come in contact with the wound a powder consisting of quinia urea hydrochlorate, 1 pint, acid gallic, 1 pint, and acid tannic, 3 parts. This causes a clot firmly adherent to the mucous membrane and also enmeshed in the rubber so that withdrawal is apt to cause pain, unless some anesthetic is employed, but it may be pulled out quickly. He thinks that it is seldom necessary to use the astringent powder and that the patient is more comfortable without it, nevertheless, in those predisposed to hemorrhage he would highly recommend it.

Dr. Otto T. Freer said that Dr. Ostrom's method of operating was simply the well-known Killian operation, with slight modifications. To enter the intricate and distorted anatomy of a septal deflection through a little cut, one-third of an inch long, as Dr. Ostrom did, was to make the submucous resection a blind operation in a field where minute vision is needed to avoid disaster. It is impossible in deflections at all extensive to do a thorough resection without an open operative field, and Dr. Freer had removed many bony deflections from patients for whom a submucous resection attempted previously by others had consisted of the cutting out of a piece of cartilage with the swivel knife through a buttonhole cut of the type advised by Dr. Ostrom, the operator, through this inadequate entrance, having been unable to take away the bony part of the deviation which kept the nostril as much blocked as if nothing had been done.

Dr. Freer did not recognize in Dr. Ostrom's description of the anatomy of deflections the conditions he had encountered in his resections and regarded the ignoring of anatomical facts of importance by Dr. Ostrom as proof that the blind mode of operation he had been following had not shown them to him. For instance, he made no reference to the frequent traumatic deflections with two or more separate fragments forming distinct cartilaginous plates of a sharp-angled deflection. A fibrous bridge passes from naris to naris between such fragments, and, by uniting the perichondrial covering of both sides of the septum, makes it impossible to pass the barrier formed by such a bridge without a sharp blade. Dr. Ostrom has advised the elevation of the coverings with a dull elevator moved from behind forward. This elevator would be arrested by the obstacles referred to, nor could it with safety be replaced by a sharp blade, if employed through a buttonhole cut. The dull elevator would also be ineffective in the many cases where inflammatory changes in the mucous membrane of the septum have left broad areas of intimate union between toughened cartilage and thickened perichondrium. These areas are never discovered until the denudation is under way and sometimes include nearly all of both the convex and concave sides of the deflection. In such cases, the denudation is one continuous dissection, and a dull elevator has no place. Dissection, however, requires an open operative field.

Dr. Ostrom does not mention the overlapping of the vomer by the cartilage in the vomero-cartilaginous articulation, nor the crossing of the blended periosteum and perichondrium from naris to naris in this articulation, a condition repeatedly described by Dr. Freer, and one which makes dull denudation downward below this articulation impossible.

Dr. Ostrom speaks of the "anterior tip" of the septal cartilage and of the "anterior ridge." There are no such anatomical designations and it is impossible to tell what Dr. Ostrom meant by them.

In regard to the removal of the bony part of the deflection, as described by Dr. Ostrom, Dr. Freer would have found himself quite helpless with the weak instrumentarium displayed by Dr. Ostrom in the face of the many massive bony deflections he had encountered. He had often taken away the anterior half of a deflected vomer half an inch thick and vomero-ethmoidal angles one-third of an inch in thickness. Such solid deflections have to be over- and under-cut, as shown in Dr. Freer's last article on the submucous resection in *The Journal A. M. A.*, 1912. Unless these bony angles are severed from the perpendicular plate above with punch forceps, the attempt to break them out in the manner described by Dr. Ostrom is dangerous and liable to create fissures in the perpendicular plate which may extend through the sphenoidal sinus to the optic foramen, with resulting blindness in the eye involved, as happened in a case described by Prof. Bernhard Fraenkel of Berlin.

For denuding the incisor crest and anterior part of the vomer, the so-called "ridge" of its periosteum, the delicate scissors shown by Dr. Ostrom seemed peculiarly inappropriate, for these rough, bony parts are covered with a periosteum so clinging that they can only be shelled out of their covering by the use of the raspatory designed by Dr. Freer, after the periosteum has been split to the bone with a strong knife. To do this, however, again implies an open operative field, for it cannot be done in the dark.

Dr. Ostrom attributed to the minute cartilaginous remnant of Jacobson's organ an anatomical importance it does not possess. It takes no part in the creation of deflections.

Dr. Ostrom's advice, not to pack after operations on the septum, is not new. It has often been given in past years by those who like to startle by boldly contradicting the teachings of the experienced, and who advance such advice as progress while in reality it is retrogressive, discarding of what has been learned by the painful experience of the profession. The objection to such advice is that its authoritative tone is apt to mislead the beginners in the specialty into a disregard of common prudence. Why do rhinologists continue to pack, in spite of these innovators? Because neglect to insert the tampon in some case where it did not seem needed, because of absence of bleeding immediately after a submucous resection, was punished by a severe hemorrhage two hours after, when the contractile effect of the cocain and adrenalin on the vessels had passed away and left them open and parietic. Packing had to then be done under most difficult conditions, with the disturbance of the wound and the chance of operating in a nose full of clots. The severe nose-bleeds occurring spontaneously from little vessels on the septum should show how dangerous it is to leave any cut vessel uncompressed in the nose until it has regained its contractility and is effectually closed. Where the buttonhole cut is used there is also danger of bleeding between the coverings of the deflection removed. Several patients operated on by others through a buttonhole cut have come to Dr. Freer with large hematomas formed in this manner and blocking both nares. In two of these abscess of the septum occurred. These hematomas could have been prevented by proper packing.

Dr. Freer's layer packing is made of strips of Johnson and Johnson's sterilized lint, cut into strips one-third of an inch wide, with sharp shears, and impregnated with powdered subnitrate of bismuth. The bismuth keeps the tampon aseptic and has been used by Dr. Freer for twelve years. In one case, a bleeding polyp of the septum, he left the tampon in for ten days without its becoming putrid. An iodoform tampon will begin to smell in twenty-four hours. To insert the tampon the nostril is held open with two of Dr. Freer's septum retractors, one, a long one, being used to guard the site of the operation. A strip is then folded on itself in the middle, stretched taut on a long dull elevator and carried back to the posterior naris when it is tamped down on the nasal floor. A second strip is inserted in the same manner and placed on the first. In this way layer after layer of

parallel strips are laid in the naris until it is filled to the top. This tampon completely closes the choana by filling the space between the nasal floor and body of the sphenoid bone; it is elastic, and evenly, without unequal pressure, applies itself to all inequalities of the nasal interior. It causes no distress and keeps the flaps in place and it gives absolute assurance that hemorrhage of moment cannot occur.

The tampon is removed in part in twenty-four hours, those strips being out which are in contact with the outer nasal wall or other strips. The strips immediately applied to the wound are left in for a day or two longer, until they have become non-adherent. As the tampon stays perfectly pure, there is no harm in leaving them, especially as the nostril should not be used for breathing for a week at any rate.

No clamp, such as has been advocated of late for the submucous resection to take place of the tampon, can give the even, reliable pressure of the latter. Clamps are apt to slip, to press too much or too little, and are about as treacherous as the clamp used to control tonsillar hemorrhage, in respect to assuring a continuous stoppage of bleeding. A patient with a good tampon after a submucous resection does not need to stay in a hospital, but may be sent home—a great advantage, for most of them dislike the idea of a hospital. To leave a patient unpacked in a hospital with the chance of an intern, inexperienced in nose work, having to pack the furiously bleeding nose of an excited patient, does not seem wisdom to Dr. Freer, as perforations and injury to the wounded parts are liable to occur.

Dr. Detrick T. Vail, Cincinnati, said that when the submucous operation for removing the cartilaginous septum was first written about he came to Chicago, in order to see it done and to study the indications for the operation. In his work previous to that time he had never found cases that seemed to require the removal of the cartilage. The most that he did was an Ashe, a Row or a Gleason operation, but after his visit to Chicago he had entirely different ideas regarding the matter, and felt that it certainly was vastly better to remove the cartilage submucously. Moreover, he was convinced that it was a very troublesome and disagreeable thing to have even a bowing of the cartilage and that the proper thing was to take out every cartilage that was not straight and in the median line. So he began to do this in many cases and with beautiful results. In time he became convinced that the operation was necessary, excepting in certain rather exceptional cases. He still does the operation and likes it very much in these selected cases, but he does it in perhaps only 10 per cent. of the cases that he did it previously. Not that he had any disagreeable results or experiences with it, but simply because he could not morally feel that he was doing the right thing in subjecting the patient to this operation, excepting in cases of marked deflection, causing or nearly causing atresia.

What better operation is there in the simpler and more common cases where there is a bowing of cartilaginous septum and some restriction of breathing on one side or asthmatic symptoms? He uses a small, sharp saw—a Holmes or Pynchon saw—and removes the bony ridge and spur, regardless of the sacrifice of mucous membrane. In conjunction with this he always does what he calls a "posterior inferior turbinectomy." He leaves the anterior part of the turbinal body alone, because he feels that under climatic influences it has a great deal to do with the physiology of the nose in a protective sense. But he saws off the entire posterior part of the inferior turbinate, to which is always attached in these cases a mulberry-like hypertrophy, the so-called "posterior hypertrophy." At the same time he snares off through the nose the mass of adenoids that almost invariably exists, not so much in the vault of the pharynx as in a vertical mass down the sides of the pharyngeal wall like an exaggerated fold. This adenoid fold exists there because the aeration has been faulty and to remove it he passes the wire snare back through the nose until the end of the cannula of the snare impinges on the basilar process of the occipital bone, the wire loop descending on the posterior wall of the pharynx and then engaging the adenoid mass in the loop of the snare by drawing the wire slowly home it is snared off. This operation

gives the patient a good nose, better, in his judgment, than the best submucous operation in these cases. He has not seen this method described by any rhinologist and considers it a valuable one.

Regarding nasal packing after a submucous resection of the septal cartilage he has tried the sponge packing as described by Dr. Ingals, but not with the same fine technic which he admires. But in his hands it was entirely inadequate. He found it so because he could not get an equal distribution of pressure over the operative field. He believes in packing, not because of the danger of hemorrhage, but for an entirely different purpose—a purpose which was not mentioned by the essayist, namely, in order to have perfect approximation of the bases of the perichondrium of the two sides. He always packs the narrow side of the nares only, that side in which the breathing space was restricted, and he uses ordinary loose-mesh sterile gauze, previously cut in long strips and rolled like a little bandage. He always keeps a number of them on hand, all sterilized and kept in a glass jar ready for use. The gauze roll is moistened before using, which contributes to neat packing. Ordinary packing forceps are used. He only packs the side of septum convexity; he does not pack both sides for fear of sloughing. The parts have already been wounded and there is a certain amount of thrombosis of some of the septal veins, and if the nares were packed too tightly on both sides, necrosis might result. The packing is only left in place for twenty-four hours.

He quite agreed with the essayist in his ideas which were progressive. The day of packing and leaving it in for as long as four days is passed.

Regarding hemorrhage in submucous cartilage resection, he has never had much experience with it. There are no blood-vessels cut if the dissection has been properly done. Someone spoke of "delayed hemorrhage"—hemorrhage that occurs a week or ten days after operation. What does delayed hemorrhage mean? Delayed or secondary hemorrhage means wound sepsis and nothing else.

Dr. A. M. Corwin said he was entirely open-minded with regard to the statement that an extensive septal operation, such as this is at times, can be done without packing, but on that point he was from Missouri. He had no reason to doubt the doctor's statements as to his results, but his own experience has been in accord with Dr. Freer's, that hemorrhage does occur occasionally, and for this packing is indicated. Furthermore, we operate on no other part of the body practically without dressing the wound, and we see no reason why we should make an extensive opening in the mucous membrane, cut away bone and cartilage, producing two loose flaps of membrane and perichondrium, and leave the wound unprotected against infection. The only case of abscess of the septum following resecting that he had ever seen after his own operating was in the case of a patient with a perfectly clean nose, packed and everything normal, who became nervous and dragged away the packing and left the wound open. An abscess of the septum developed at the site of the resection and greatly increased her suffering and the danger and delay in healing. Moreover, there is no harm in packing, if done properly, while hemorrhage and infection may occur without it; therefore, the argument is in favor of packing.

He has found in the past few years the use of a little gauze roller bandage and camphorated vaselin has been very satisfactory for this purpose. He cuts these strips of gauze, which are one-quarter inch wide, into 2- or 3-inch lengths and boils them in the vaselin in a small crucible at the time of operation. This is cooled off by the time the operation is finished. These little pieces of gauze thus saturated are then packed carefully into the nose, one of them having been spread over the septal wound. These are left in practically until the second day. Then two or three pieces are removed. Each day following a few pieces are taken out at a time. There is no pain at all from removing them. This seems to him a very good way of packing, as he can take out what he wants and leave what he wants, without dragging on long unmanageable strips. The speaker believes that any man who does a radical operation on an inferior turbinate and does not pack is almost certain to have hemorrhage, often profuse, sometimes serious, and he understands the writer to say that he employs little or no packing in such cases.

There were many points he would like to go into, but believed that we should accentuate the proposition that we should treat a nasal wound as far as possible in an aseptic manner. This involves proper protection by packing. We know that the larger the opening made, whether by incision or incidental tearing, the more need there is of packing.

To limit the discussion to-night to this one point of to pack or not to pack is unfortunate, since the subject matter of the paper has comparatively little to do with this point, notwithstanding the title, but is a lengthy dissertation on the technic of operating, and many interesting points touched on by the essayist should be discussed, favorably or otherwise.

Dr. Edwin Pynchon said that while the essayist had very modestly disclaimed any credit for bringing anything new before the members, he must acknowledge that he had brought forth some ideas that were worthy of mention that had not been elsewhere brought out, and he wished to particularly speak of the use of the blunt-pointed tenotomy shears.

Regarding packing, he has found that the method advocated by Dr. Freer is the most practical. However, in place of bismuth he likes to medicate it with a vaselin preparation containing antiseptics. One of the features to consider in packing the nose is that at the time of operation, owing to the use of cocaine, the outer wall is very much contracted, and of course afterwards becomes congested, so for that reason it may make too much pressure. One of the great objects is mechanically to hold the two opposing surfaces together, and the more perfectly they are put in apposition the more surely they will heal and thus avoid the formation of hematoma which can otherwise organize and cause ultimate thickening of the septum, while it was designed through the operation to cause the septum to be as thin as possible. So consequently he is in favor of packing both nostrils.

Regarding the removal of the packing, as Dr. Freer suggests, he is in the habit of taking out half of the upper part in both nostrils the day after the operation; then may be on the second day all of the packing on the side that was concave, and in the third day the remainder of the packing. Prior to using these strips he used Bernays-Simpson tampons, but it is easy to see from a mechanical standpoint how impossible it is to make accurate apposition of the perichondria by the use of a device of that kind which swells unequally (two from the same box will swell differently), and may thus produce too much pressure. Another thing: The tampon, introduced in any way, cannot cover as much area as has been separated, so consequently above or back of the tampon hematoma may occur, and any thickening of the septum is detrimental in the way of interfering with the breathway in the upper part of the nose.

Dr. George E. Shambaugh stated that he had learned in the early days of his practice that it was not a safe procedure to do even the simpler operations in the nose and allow the patient to go home without packing, especially in a city the size of Chicago, where it often requires several hours before a patient can be reached. Both on account of the discomfort to the patient in having the nose packed and because of the long trip from the office to the patient's home, Dr. Shambaugh has in recent years performed almost all of even the simpler operations of the nose at the hospital, where the patient is allowed to remain over night. He is not in the habit of packing the nose under these circumstances, for if a patient remains quiet in bed the chances of a hemorrhage are much less than if he attempts to make a long trip to his home after the operation. If a hemorrhage should occur, the intern at the hospital can pack the nose, if necessary. As a matter of fact, Dr. Shambaugh can recall but one case where a patient left in this way had to have the nose packed by the intern; this was a case where nasal polypi and part of the ethmoid bone were removed.

In his operations on the septum he has always been in the habit of packing the nose. The packing in one side is removed at the end of twenty-four hours and the other at the end of forty-eight hours. He places a piece of paraffin on the side of the septum where the mucous membrane has been incised, which facilitates very much the removal of the packing from this side.

The point which Dr. Vail wished to emphasize, that secondary hemorrhage always means sepsis, Dr. Shambaugh is not willing to accept. He stated that while it is true that sepsis is often the cause of secondary hemorrhages, it does not follow that all secondary hemorrhages are the result of sepsis. Most of the cases of secondary hemorrhages which he has seen develop in cases where the tonsils had been removed, the hemorrhage taking place usually from five to ten days after the operation. In not a single one of these cases has he been able to recognize anything which he would class as sepsis, and in none of these cases was the local reaction at all marked. In a case of severe secondary hemorrhage from an operation in the nose the bleeding was accounted for by a high blood-pressure, and there was no evidence at all of infection in the nose.

Dr. Otis H. Maclay said he had enjoyed the paper and discussion, and especially the conservative remarks with reference to septal work. It has always been his desire to do his septal work that he could leave as much as possible of the septum, endeavoring only to get a functioning nose.

Regarding packing, he has always used packing, leaving it in originally for forty-eight hours. He has never had any sepsis, so far as he knows. For the last six months he has been taking out the packing, as a rule, in twenty-four hours. He has never had any hemorrhage that he has known of. There has always been some oozing and bleeding in all his operations. Whether without packing that would have been present or not, he does not know, but he has always felt safer when it has been used. He has packed less firmly in the last six months than before that time, but the packing, although it has allowed perhaps a little more oozing, has always been sufficient to control any bleeding that has occurred, but he has never felt perfectly justified in leaving it all out.

It is a matter of progress to hear this paper. Perhaps it is the proper course, and we may all gradually work into it. At least the method should be carefully considered before being accepted or condemned. The papers read before the society and the discussions represent the best efforts in this line, and although the society should be progressive, it is equally important that we should be conservative in the methods employed, since the work recognized in the society is considered the proper and safe course to pursue, and doubtless is adopted by others on that basis.

Dr. J. Z. Bergeron thinks that the principal reason for not packing is largely, if not absolutely, to lessen the patient's discomfort caused by the packing. For the last five or six months he has used the strip packing described by Dr. Freer, one layer on top of another, surrounded by a layer of gutta serena, and on removing it, after twenty-four or thirty-six hours, he has found that it caused absolutely no pain.

Dr. Edwin Pynchon said it had always occurred to him that in the use of the packing Dr. Freer advises, getting it in a piece and cutting off a strip about one-quarter or three-eighths inch in width; it is naturally irregular in shape, and if it is not cut in the right direction it breaks easily. It has seemed to him that some manufacturer should put this material on the market in strips with a selvedge edge. He has never been able to find it.

Dr. Joseph C. Beck has, within the last three months, done quite a few sub-mucous resections without packing. He would not say that he had left the nose without anything, but he had used no material such as gauze. He considers that the stoppage of the primary hemorrhage is very essential, and while he has the flaps open he packs the gauze firmly between them and allows it to remain in there from three to five minutes. Then, after removing, he watches for a minute or two, until he believes that the hemorrhage has stopped. Of course, if the arteries that come from the palate to the nose are cut, they might possibly start another hemorrhage, but five minutes' waiting is sufficient time. When he is sure that the hemorrhage has stopped, he brings the parts together as firmly as possible, holds them and introduces the wedge-shaped metal spring, as recommended by Brünig, he believed.

Dr. Beck agrees with Dr. Shambaugh. He has not packed a nose after an inferior-turbinate operation since he can remember, and has had no occasion to regret it.

He used the spring referred to above in ten successive cases with good results. Then he had a case where a hematoma followed, the pain radiating to the face with slight temperature. But he would not stop using the spring on account of this one case. Previous to using the spring, he used the packing referred to by Dr. Bergeron, which he (Dr. Beck) devised for that purpose and had no occasion to regret it, except the discomfort occasioned to the patient.

Dr. Robert Sonnenschein answered Dr. Pyncheon's question regarding his inability to obtain gauze with a selvage on both sides. It is used very extensively in Europe. Mr. V. Mueller carries it and it can be obtained in the sizes of three-eighths and one-half inch.

Dr. Louis Ostrom, in closing, said that the members were behind the times if they packed. He has not packed for five years. They would not discontinue packing in Europe almost exclusively after submucous resection unless it was a good procedure. In the later books—St. Clair Thomson's and Parker's—published this year, no packing is advocated. Killian does not pack. Packing is not essential. He cited a case in which temperature had followed the operation, and after three days of this condition, with pain radiating to the face, he inserted a knife, expecting to see pus, but instead found only clear serum. He had a case of a hemophilic in whom the blood dripped out like water in which he packed. He gave five packages of antitoxin and within an hour afterward had clotting. The packing was removed the next morning and in about four hours afterward the nose was swelled just as tight as if there had been a packing there. He had tried out the methods of packing referred to over and over again, and has had nothing but trouble from them. When he has bleeding he packs, but is not going to pack until there is bleeding. He keeps his patients under control so that they are right beside him.

Regarding perforations, we must remember that our work to-day must not be classed with that done three or four years ago. Dr. Freer said he had had perforations by accident. Dr. Ostrom has had them, but they were due to carelessness, or things that were beyond his control. But in those conditions it was simply a puncture, just as though made for drainage purposes.

He has never heard of the wire springs, referred to by Dr. Beck, but is going to get some.

Regarding his use of the expression, anterior tip, it was simply a doubling-up of language. He meant simply the tip or anterior end of the septum.

All the points brought out by Dr. Freer are covered in the paper, which the essayist did not have time to read in full. The paper deals with the technic, not with the pathology, but every form of reflection is considered and cases cited to explain the technic.

CRAWFORD COUNTY

The Crawford County Medical Society met in regular session March 13, 1913, in the Carnegie Library, at 2 p. m. The meeting was called to order by the president, and the minutes of the previous meeting were read and approved. After some discussion on the application of Dr. G. F. Smith, it was moved that the report of the Board of Censors on the application of Dr. Smith be received, and that Dr. Smith be elected to membership in the Crawford County Medical Society. Seconded and carried.

Dr. Voorheis read an exceptionally interesting and valuable paper entitled "Conservation in Medicine," dealing with the various problems and methods of conserving the health of the people.

The paper on "Serum Therapy," prepared by Dr. Davis, was also very interesting and instructive. The papers were discussed as one, the discussion being opened by Dr. Price and freely indulged in by the various members of the society present.

A communication from the Committee on Red Cross Medical Work regarding the appointment of a local committee of five physicians in the county was read. It was moved, seconded and carried that such committee be appointed by the president, who appointed the following members: H. N. Rafferty, A. Lyman Lowe, C. H. Voorheis, G. H. Henry and J. E. Midgett.

Moved, seconded and carried that the May meeting be held in Hutsonville. After some discussion it was decided to make the meeting a public meeting and to arrange a program that would appeal to the general public. Drs. Lowe, Voorheis and Price were appointed to prepare the program for this meeting.

Moved, seconded and carried that the secretary inform the president of the Alumni Association of the Medical College of the University of Illinois that the following resolution was adopted by the society:

Resolved, That the Crawford County Medical Society is in favor of a department of medicine in the University of Illinois.

There being no further business to come before the society it was, on motion, duly adjourned.

A. LYMAN LOWE, Secretary.

DOUGLAS COUNTY

The regular quarterly meeting of the Douglas County Medical Society was held in the K. of P. Hall, Tuscola, Ill., Thursday, April 10, at 1:30 p. m., with the following members in attendance: Drs. E. S. Allen, I. W. Hall, W. A. Wiseman, W. E. Rice, Philip Herrin, J. L. Reat, F. W. Eskey, W. S. Martin, John Ewing, N. C. McKinney and W. C. Blaine.

Dr. H. A. L. Nickerson, president of the Illinois State Medical Society, read a very interesting and instructive paper on "Acute Articular Rheumatism."

Dr. E. B. Cooley of Danville, counselor for the Ninth District, was present and in his usual agreeable manner made a short talk to the Society.

Four new members were accepted by the board of censors: Raymond C. Gillogly of Newman, R. P. Ratts of Longview, C. W. and Alta Monroe of Arthur.

The following officers were elected for the ensuing year: President, Dr. Philip Herrin of Villa Grove; vice-president, Dr. N. C. McKinney of Murdock; secretary-treasurer, Walter C. Blaine of Tuscola; delegate, Dr. H. I. McNeil of Newman; alternate delegate, E. S. Allen of Arcola; censors, Dr. W. E. Rice of Tuscola, Dr. E. S. Allen of Arcola, and W. A. Wiseman of Camargo.

The following resolutions were passed by the Society:

Resolved, By the Douglas County Medical Society that we gladly place ourselves on record as being in favor of a state wide plan to improve our highways in such manner as will lessen the hardships of travel and at the same time improve the economic and sanitary conditions of the country.

JOS. L. REAT,

F. W. ESKEY,

W. A. WISEMAN, Committee.

WHEREAS, An efficient State Board of Health contributes largely to the welfare of the people by promoting sanitation and lessening the evils of charlatans who prey upon the credulity of the unfortunate and misguided. Therefore be it

Resolved, By the Douglas County Medical Society that we most respectfully request our governor in the selection of his men for this board that, without regard to *political creed*, he appoint the very best men he can secure in the medical profession to fill these important places of honor and trust; men of known scientific attainments, who are upright, ethical and have executive ability, who will command the respect and secure the cooperation of every reputable practitioner throughout the state.

WALTER C. BLAINE, Secretary.

• PHILIP HERRIN, President.

EFFINGHAM COUNTY

The regular monthly meeting of the Effingham County Medical Society was called to order by the president at 1:30 p. m., April 8. The minutes of the last meeting were read and approved. As the chairman of the Committee for Medical Defense Fund was absent, a round table discussion of the subject was entered into freely by all, and referred back to committee for definite action at the May meeting.

A very interesting paper on "Metastatic Infection" was given by Dr. Frank Buckmaster. This subject was very thoroughly discussed by Drs. Burkhardt, Bing, Wettstein and Hohman.

Those present were Drs. Taphorn, Bing, Bassett, Buckmaster, Wettstein, Hohman, Henry and DeWilliams of Vandalia.

JERSEY COUNTY

The Jersey County Medical Society held its annual meeting Tuesday, April 8, at Jerseyville, Ill. Dinner was served at the Colonial Hotel and after dinner the program and business meeting was held in the hotel parlor. An interesting paper by Dr. Wesley Park of Grafton was read.

Dr. C. E. Black of Jacksonville gave an interesting sketch of the first medical school in Illinois, which was a part of Illinois College at Jacksonville. Dr. Black talked on topics of general interest to the profession.

Officers were elected as follows: president, A. K. Van Horne; vice-president, H. R. Gledhill; secretary-treasurer, A. M. Cheney.

Dr. Frederick Doyle was admitted to membership in the society.

KNOX COUNTY

The regular meeting of the Knox County Medical Society was held in Galesburg, April 17, at 10:30 a. m., with President Bradley in the chair. Thirteen applications were accepted: P. E. Tovey, C. M. Rose, L. J. Pollock, J. F. Corbin, H. F. Mundy, H. E. Parry, M. H. Auter and H. L. Wilson, all of Galesburg; Beatrice Opre and R. H. Stewart of Victoria; E. J. Oberholzer, Williamsfield; A. H. Harms, Knoxville, and one reinstatement, C. W. Hunter of Oneida.

The following committee appointments were announced by the president: Public Health and Legislation.—J. D. Bartlett, C. B. Horrell, L. Becker.

Entertainment.—F. G. Hall, J. M. Bohan, C. E. Quaife.

Resolutions and Communications.—R. C. Matheny, G. S. Bower, A. F. Stotts. Medicolegal.—B. D. Baird.

Auditing.—B. D. Baird, W. H. Maley, J. M. Bohan.

Bills to the amount of \$138.70 were allowed. Drs. Ripley, Maley and Baird were appointed a Committee on Credits.

The Red Cross Society having requested that a committee be appointed to cooperate with the national society in emergencies, the president, secretary and Drs. Percy, Franing and Finley were so appointed. A resolution endorsing the platform of the Illinois Highway Association was passed unanimously. Strong resolutions against criminal abortion were adopted. A committee was also appointed to confer with the Graduate Nurses' Association to formulate some plan to obviate the difficulty in having sufficient nurses to meet the demand. It was voted to subscribe for 100 copies of the Knox Medic.

The scientific program was carried out as follows:

A clinic at the Galesburg Hospital was held from 8:30 to 10:30 a. m. at which Dr. W. L. Ballenger of Chicago operated on twelve cases, removing the tonsils in most by the Sluder method. The adenoids were also attended to. The clinic was well attended and very instructive.

Dr. A. D. Pollock opened the afternoon session with a talk on "Femoral Fractures," with demonstration of a splint.

Dr. C. B. Ripley of Galesburg presented a paper on "Cardiac Complications," with special reference to those following infectious diseases in childhood.

Dr. H. B. Hemenway of Evanston presented a paper on "Principles of Therapy under the Teachings of Modern Biology" that went into the subject very thoroughly.

Dr. W. L. Ballenger of Chicago gave a talk on "Indications for Various Types of Mastoid Operations."

The thanks of the society were voted to Drs. Ballenger and Hemenway.

Forty members were in attendance and about twenty-five visitors, most of whom were physicians from adjoining counties.

G. S. BOWER, Secretary.

LAKE COUNTY

The regular spring meeting was held April 17, at 5 p. m., at the Hotel Moraine, Highland Park. After the reading of the minutes of the last meeting the secretary made a few remarks regarding the importance and value of attending the state meetings, and especially of the delegate and alternate letting nothing, if possible, prevent their attendance. Dr. J. L. Taylor was then elected delegate, and Dr. L. M. Bergen alternate. Dr. Barker then read the following resolution:

WHEREAS, There are reliable rumors afloat in Lake County regarding the inadequacy of the work done by Dr. A. E. Brown, county physician; be it

Resolved, by the Lake County Medical Society, that the Board of Supervisors be requested to appoint a committee at its next special meeting, April 18, 1913, for the purpose of investigating the truth or falsity of the said rumors, with a view either to exonerate him of the charges or make some other arrangements as to the medical and surgical care of the county poor.

After an interesting discussion in which Drs. Brown, Daniels and several others participated, the resolution was tabled, and then Dr. Taylor moved that the president appoint a committee of seven members from different parts of the county, who should devise a better plan for the medical care of the county poor, which should be practicable, and this plan should be presented to the Board of Supervisors at their June meeting for their consideration. This motion was unanimously carried. The president appointed the following members on this committee: Dr. Taylor, chairman, Drs. Sheldon, Foley, Barker, Fuller, Palmer and Young.

Dr. DeLee, the well-known obstetrician of Chicago, then gave a very interesting and instructive talk in response to questions by different members, explaining his treatment of occipitoposterior presentations at different stages of labor, securing anterior rotation by internal manipulation with or without the aid of forceps. The talk on the treatment of puerperal sepsis was especially interesting. He said he had spent six months in preparing the chapter on this subject in his standard work. Some of his chief points were: First be sure the fever is due to trouble with the genitals, and not to some other cause, like tonsillitis, appendicitis, typhoid, etc. If sure the trouble is in the genitals and stitches have been taken either in the perineum, vagina or cervix, take them out promptly. He has always found pus in such cases. Next and most important, don't curette or use any intra-uterine treatment except in case of hemorrhage. Curettage is one of the most certain means of causing a fatal result. Lastly, raise the patients in bed to favor pelvic drainage, give a cathartic, 15 drops each of ergot and hydrastis three times daily, and then let them alone. In over 15,000 labors he had had only four deaths from puerperal sepsis, and in none of those four cases was anything found in the uterus. He had found antistreptococcus serum of value in these cases by promoting leukocytosis which protects against infections of all kinds. He did not favor the use of vaccines. The society gave Dr. DeLee a hearty vote of thanks for his very able and instructive remarks.

Dr. Gourley then read a paper on "Conservative Surgery" containing many excellent and important points.

Dr. Taylor reported the death of Dr. Everett E. Traey of Prairie View, and the society voted to send a cordial message of sympathy to the widow and children.

The society then enjoyed a delightful banquet, enlivened with interesting stories. There were twenty members and four guests present.

The next meeting will probably be held in Libertyville late in June.

W. C. BOUTEN, Secretary.

LA SALLE COUNTY

The annual meeting of the La Salle County Medical Society was held in the supervisors' rooms at Ottawa, April 22, and was largely attended. Discussions were held on topics of interest to the association and a clinic held at the hospital.

Dr. A. M. Corwin of Chicago held the clinic and demonstrated the enucleation of tonsils by the Sluder tonsillotome, a new and very effective method. Drs. Dorsey and Perisho of this city were also on the program. Dinner was served at the new Clifton Hotel at 1 o'clock.

Those attending from this city were Drs. Dorsey, Sexton, Perisho, Wilson and Howe.

MACON COUNTY.

The annual banquet of the Macon County Society was held at the St. Nicholas Hotel, Decatur, Ill., April 23, 1913. Previous to the banquet a business meeting was held at which the following officers were elected: president, J. N. Randall; vice-president, J. W. Sanders; secretary-treasurer, C. E. Hildreth. Dr. William Bell, the retiring president, was elected delegate to the state convention at Peoria, and Dr. M. P. Parrish, alternate.

Dr. William E. Quine, dean of the College of Physicians and Surgeons, Chicago, gave an interesting address. He spoke on the "Tendencies of Some Surgeons to Insist on Unnecessary Operations for Pecuniary Gain."

M'DONOUGH COUNTY

The McDonough County Medical Society met April 8 in the City Hall at Bushnell. A large number of the members were in attendance despite the inclemency of the weather. Aside from the regular meeting resolutions were adopted to instruct the state senator and representatives from this district to not only vote but to work against the proposed measures relative to adopting the osteopathic bill now pending before the legislature which creates a special board of examiners for osteopaths and to give them the right of practicing medicine and surgery.

The members also sent instructions to the senator and representative to bring before the legislature a bill to stop the importation of tuberculous cattle into the state.

Dr. A. K. Drake gave a very interesting talk on "Glaucoma," a disease of the eye.

Dr. Elizabeth Miner read a very interesting paper on "Pneumonia" and Dr. Duntley of Bushnell addressed the members on "Medicolegal Jurisprudence."

M'LEAN COUNTY

At the April meeting of the McLean County Medical Society the following officers were elected: president, Dr. Wilfred H. Gardner; vice-president, Dr. Horace W. Elder; secretary-treasurer, Dr. Thomas D. Cantrell; state delegate, Dr. W. H. Gardner; censors, Drs. H. W. Elder, F. C. Vandervort and W. M. Young.

Dr. M. Wallis read an excellent paper on "The Care of the Primiparae" which was well and generally discussed. The attendance was good and interest fine. Our membership has now passed the 100 mark.

Fraternally,

T. D. CANTRELL, Secretary.

MONTGOMERY COUNTY

The Montgomery County Medical Society held its meeting February 25 in the Club Rooms at Hillsboro, Ill. In the absence of the president, Dr. Z. V. Kimball was chosen to preside. The following were in attendance: L. S. Brown, M. L. Moyer, W. W. Douglass, H. A. Seymour, F. C. Blackwelder, M. W. Snell, T. W. Williams and H. F. Bennett.

The secretary was instructed to write a letter, thanking Dr. Lewis Wine Bremnerman of Chicago for his splendid clinic at our January meeting.

The scientific program of the meeting consisted of a most excellent paper on "Meningitis" presented by Dr. M. W. Snell. The paper brought out considerable discussion that was most interesting and instructive.

The program committee selected Litchfield as the next meeting place. Meeting adjourned.

The meeting of March 31 was held at St. Francis Hospital, Litchfield, with the following present: Drs. P. M. Kelly, W. W. Douglass, R. W. Allen, L. G. Allen, T. W. Williams, M. W. Snell, R. N. Canaday, G. A. Sihler, Jr., E. H. Hermann, C. R. Driskell, C. H. Lockhart, Z. V. Kimball and H. F. Bennett.

A most interesting and instructive clinic on internal medicine was held by Dr. William Engelbach of St. Louis. We regret that many of our members missed the opportunity of hearing this able clinician.

The applications for membership of Harley G. Stanton (St. Louis University, 1912) of Irving, J. M. Hoyt (Marion-Sims, St. Louis, 1897) of Fillmore and Karl L. Hayes (College of Physicians and Surgeons, Chicago, 1906) of Farmersville were read, approved and applicants elected. The applications for reinstatement of H. A. Seymour of Hillsboro, C. R. Driskell of Farmersville and Chas. Ford of Waggoner were approved.

MORGAN COUNTY

The Morgan County Medical Society met April 10, in Jacksonville. A change in hours of meeting was made as an experiment for two reasons: to give the members attending opportunity to see clinical cases and again to give men in the county opportunity to get in and out during the middle of the day; accordingly clinics were held at Passavant Memorial and Our Saviors hospitals by Drs. Black, Crouch, Hairgrove, Hardesty, Norris and Stacy, together with clinical reports by Drs. Adams, J. A. Day, Milligan and Reid.

At 1 p. m. at the Medical Library, Dr. Carl E. Black read a paper on "Gas Gangrene," together with reports of five cases. This condition is a rather rare one and demands immediate attention since it presents a combination of a serious infection which causes an immediate and large loss of tissue and death if not speedily checked. The bacilli of malignant edema and aerogenes capsulatus are the most common causes.

Two cases showed typical tetanic seizures, spasms, muscular stiffness, twitchings and nervousness. The association of tetanus and aerogenes capsulatus both being anaerobes, would seem a rational one, but recorded cases seem to be very rare. Kolb and Laubenheimer in *Münchener Med. Wochenschrift*, March 4, 1913, report a case of crushing injury operated upon and antitetanic serum was given as a preventive of lock jaw; postoperation; gauze removed, hissing sound, gas forming germ found, also bacilli tetani; more antitetanic serum injected. Recovery. This case shows that antitetanic serum did prevent tetanus. The presentation of the subject was interesting and a number discussed it. Dr. Black laid especial stress on the importance of injection of serum as a prophylactic in gunshot wounds and in injuries contaminated by street dirt and manure. The patient should always have the option of receiving the serum or not.

The letters of Dr. Nickerson advocating a progressive and scientific State Board of Health, and of Dr. Whalen recommending good roads legislation, were referred to the legislative committee with power to act in accordance with the letters.

Doctors present were: Crouch, Ogram, Woltman, Milligan, Black, Hardesty, Adams, Gregory, Cochran, Perkins, Hughes, J. K. Elder, Jones, Hairgrove, Morris, Leonard, Comatsey, Stacy, Spencer and Franklin.

GEORGE STACY, Secretary.

PEORIA COUNTY

Regular Meeting, Feb. 18, 1913

The meeting of February 18 was called to order by the president, Dr. H. M. Hayes, and the following were present: Drs. McMahan, Meloy, Levitin, Farnum, J. C. Roberts, Foerter, Marcy, Allison, Hasson, Ulrich, C. W. Miller, Kirby, Wiens, Short, Eicher, E. L. Davis, Roskoten, M. D. Sprague, R. B. Roberts, Stephenson, C. D. Thomas, Huber, John Sloan, Daugherty, Duane, Cory, Wakefield, Gillespie, Barbour, Dr. R. B. Robert's father, Sprenger, Washburn, Hanna, Allen, Easton, McIlvaine, Collins, Weber, Bacon, Hanley, Knapp, Corcoran, Magee.

The minutes of the previous meeting were read and approved. A very interesting "Case of Psoriasis" was presented by Dr. W. B. Wakefield. On motion of Dr. Hasson the regular order of business was postponed until after the scientific program. Dr. Dean Lewis then read a most instructive paper on "Fibrous Osteitis." The paper was especially interesting and was discussed by Drs. E. L. Davis, Weber, Bacon and S. M. Miller.

Dr. Eugene Cohn presented a specimen of an appendix which he had just removed containing a pin. On removal of the appendix the pin was found projecting from the appendix into the cecum.

Dr. Allison made a report of the program of arrangements for the state meeting.

Dr. Knapp made a final report of the banquet committee showing a surplus of \$13.50. It was moved, seconded and carried that this surplus be turned over to the Bulletin fund.

The meeting adjourned.

Regular Meeting, March 18, 1913

President H. M. Hayes presided and the following were present: Drs. Wakefield, Mars, R. C. Bradley, E. H. Bradley, Hasson, S. M. Miller, Wiens, Cohn, Kraft, Brock, Foerter, Campbell, Brobst, Knapp, John Sloan, McIlvaine, Huber, Kirkpatrick, Corey, P. T. Spurek, McMahan, Sedgwick, Marcy, Kerr, H. B. Thomas, Allen, Short, Will, Stephenson, C. D. Thomas, Easton, Sprenger, F. S. Davis, Allison, Magee, Bacon. Visitor: Dr. W. H. Packard.

After the minutes of the previous meeting were read, the regular order of business was deferred until after the scientific program.

Dr. Henry B. Ward of the University of Illinois, Champaign, then delivered a most delightful and instructive lecture on "The Transmission of Protozoal Diseases from Animal to Man." Dr. Ward's delivery was especially pleasing, his subject matter very practically applied and rendered very impressive by a series of superb charts. The plasmodium malaria was shown in its various phases of development from man through the mosquito route to man again. The causing elements in amebic dysentery, intestinal ulcers, liver abscesses, etc., responsible for one-fourth of all deaths in Manila; the trichomonas intestinalis and balantidium coli, found in some forms of dysentery, the latter occurring only in the country because it has its nativity in pigs. The trypanosoma whose habitat is the rat, causes sleeping sickness in man through infection from the biting-fly, in which it makes its home for a generation. Spirochetes, Dr. Ward believes, are animal and not vegetable. He is also of the opinion that the transmission of the infection is not ordinarily through any biting insect. Yellow fever remains unsolved. The parasites have not been determined, although their life history has been worked out. The mosquito becomes infective in eleven to fourteen days after inoculation. The little heathen belongs to the malaria group. There are other organisms beyond our vision, waiting for some ultra microscope to detect. Drs. Bacon, Will, Cohn, Short, Kerr, Huber and Professor Packard of Bradley entered into the discussion.

Dr. J. H. Bacon gave a very interesting talk on "The London Clinics," dwelling on the work of Lane on intestinal infections. Drs. Short and Hayes

added suggestions along the line of finding things in "Ole Lonnon." Opinions differed materially as to whether the English capital has fogs. We, the uninitiated, could only weigh the evidence brought out in the hearing, giving the speakers due credit for their several reputations for veracity.

Dr. W. R. Allison made a touching appeal for the payment of the state meeting assessment. Just how many were touched we have not been informed.

Dr. R. A. Kerr turned in the banquet receipts and \$13.50 surplus, presumably to save litigation and expense.

The secretary reported the completed organization of the Peoria Health Service League, which is to be a clearing house for health legislation, comprising three delegates from each organization in the city interested directly in public health. Dr. Kerr moved that this society be represented by three delegates. Carried. Drs. George Parker, R. A. Kerr and E. W. Oliver were appointed.

The secretary read a letter and answers from the Peoria Health Service League to the candidates for mayor, in which said candidates expressed their opinions as to whether the Peoria City Medical Society should be consulted relative to the appointment of health officers. They were not unfavorable to getting the endorsement of the society, since it represents all the reputable physicians in Peoria with but three or four exceptions.

Bills for printing, \$46.35, and rent for three months were read and ordered paid.

Dr. V. C. Morton's transfer to the Champaign County Society was reported by the secretary.

After a rising vote of thanks to Dr. Ward, proposed by Dr. S. M. Miller, the society adjourned.

ROCK ISLAND COUNTY

Thirty-two members attended the annual meeting of Rock Island County Medical Society at Rock Island Club, Tuesday evening, April 8, 1913. Dinner was served at 6:30 p. m., following which election of officers resulted in carried motions that unanimous ballots be cast for the following: president, Dr. W. D. Snively, Rock Island; first vice-president, Dr. J. W. Seids, Moline; second vice-president, Dr. H. J. Love, East Moline; secretary, Dr. W. D. Chapman, Silvis (reelected); treasurer, Dr. A. T. Leipold, Moline (reelected); delegate, Dr. E. Sargent, Moline; alternate, Dr. G. L. Eyster, Rock Island.

By-laws, Chapter V., Section 1, was amended by vote to read: "Annual dues shall be \$5, etc.," balance of section remaining unchanged. Reports of secretary and treasurer showed cash balance on hand of \$184.73 and a present membership of seventy-three, a gross gain of twenty and a net gain of twelve members for the year. Drs. L. D. Barding, Alexander Craig and W. A. Crooks were elected to membership. Dr. L. W. Littig, Davenport, Iowa, was elected to honorary membership in recognition of his regular attendance at our meetings and his able contributions to the success of our scientific programs throughout the year. The application of Dr. J. H. LaGrange was read and referred to committee. A committee was appointed to comply with requests for good roads activity contained in a communication received from President-Elect Whalen of state society. The two papers constituting the program were unusual and excellent. Discussion was better participated in than is our habit. Adjournment taken until June.

W. D. CHAPMAN, Secretary.

STEPHENSON COUNTY

The members of the Stephenson County Medical Society met April 11, 1913, in the supervisors' room at the Court House in Freeport, Ill. The society appointed a Red Cross committee in accordance with the invitation recently sent out by Dr. Kolber, chairman of the Red Cross Committee of the American Medical Association. On hearing of the disaster by flood in the states of Indiana and Ohio, the committee took it on themselves to sponsor a relief fund. To date a collection of over \$1,000 has been taken up for the American Red Cross Society.

The special committee appointed at a recent meeting of the society made the following report: We, a committee of physicians of Freeport, appointed by the president of the Stephenson County Medical Society, hereby make application to the Stephenson County Medical Society to grant us permission to organize an auxiliary medical society to be known as the "Freeport Physicians Medical Club (or Academy)". The following amendment is offered to the constitution and by-laws of the medical society: The county society hereby authorizes and establishes a subsidiary society to be known as the Freeport Section of the Stephenson County Medical Society. This society shall be self-sustaining and shall have laws and by-laws independent of the Stephenson County Medical Society, but harmonious with and subject to the rules, laws and by-laws of the Stephenson County Medical Society." The report of the committee was accepted and a motion was carried to the effect that an amendment such as proposed by the committee be made a part of the existing constitution of the society. Proper action will be taken to effect this change and it is hoped that ere long the profession of Freeport may be enabled to come together more frequently than in the past, when meetings were held every three months. This will in no wise interfere with the regular quarterly meetings of the county society, which will be maintained as in years past.

The pulmotor apparatus owned by the Freeport Gas Company was demonstrated by Dr. W. T. Collins.

Dr. W. L. Karcher's paper on the subject of "Exophthalmic Goiter" was made doubly interesting by the use of the stereopticon. Pictures were shown of actual cases of the condition, together with microphotographic plates of the various pathologic states found. In addition several postoperative cases were present, so that one felt as though he were back again in the clinics.

WARREN COUNTY

The semi-annual meeting of the Warren County Medical Society was held at the Monmouth Commercial Club on Friday, April 4. The meeting was called to order promptly at 1 p. m. by the president, Dr. W. H. Wells, and the reports of the secretary and treasurer were read and approved. After the reading of these reports, the applications of four physicians for membership in this society were read and the board of censors were asked to report. They reported favorably and the four men were taken into full membership. They are Drs. P. E. Kimery of Smithshire, M. S. Jewell of Little York, S. M. Pittman of Greenbush and N. S. Hoornbeek of Youngstown. The report of the secretary then brought out an interesting fact, that every eligible physician in the county, in active practice, is a member of the county society. (What county can duplicate this record?) The officers for the ensuing year were then elected. Dr. J. F. McCutchan of Alexis, the oldest practitioner of Warren County, was unanimously elected president of the society, receiving the vote of every member. Dr. McCutchan is an octogenarian, and has practiced his profession forty-five years, and is still quite active, and should see several years active service. Dr. E. C. Linn of Monmouth was elected vice-president, and Harold M. Camp, secretary and treasurer. Dr. W. H. Wells was elected delegate to the state society meeting, and H. L. Kampen was elected as alternate. A committee was appointed to confer with the legislators from this district and urge their support for the university appropriation bill, which will benefit the university medical school. This committee was Drs. H. M. Camp, Alva Hiett and Ralph Graham.

After the business of the society was transacted the first speaker of the afternoon was introduced, Dr. Robert H. Smith of Seaton, who gave a talk on "One Case of Ascites, with the Differential Diagnosis." Dr. Smith, in his usual thorough way, gave the history of a very interesting case that recently came up in his practice. The differential diagnosis is not so simple as is usually thought, when we carelessly say "it is either due to the heart, liver or lungs," and the reasons for this were clearly given in the paper. The paper was discussed by the following physicians: Drs. Bacon of Macomb, Dorsey of Keokuk, Sherriek of

Monmouth, McGee of Burlington, Stremmel, Holmes and Hermetet of Macomb, Finley and Luster of Galesburg. Dr. Smith then closed the discussion.

The second speaker was then introduced, Dr. Bayard Holmes of Chicago, who gave a talk on "The Complications of Cholecystitis as Shown by the Experience of the Past Three Years." Dr. Holmes gave the minute anatomy of the liver ducts and gall-bladder and showed how gall-bladder infections could be responsible for many serious complications. He showed that an apparently mild infection of this structure might be followed by severe complications, and that the degree of infection and severity of the complications had no definite relations whatsoever. Also, that the apparent severity of the infection should not always determine the treatment. The paper of Dr. Holmes was based on his own experience, and it has been a very broad one, as could readily be seen by the talk. Dr. Holmes stated that in his opinion the only indications for removal of the gall-bladder were: first, those cases where there is a destruction of the duct, and second, those in which is seen an irreparable injury to the gall-bladder itself. This paper was discussed by a number of men, being led by Dr. Stremmel of Macomb and Dr. Dorsey of Keokuk. Others who discussed the paper were Drs. McGee of Burlington, Iowa, Bacon of Macomb, Finley of Galesburg, and then the discussion was closed by Dr. Holmes, who was gratified to see so many of the surgeons present agreed with his ideas.

The next speaker was Dr. Wm. E. Quine of Chicago, who gave a talk on "The Relations Between Cardiovascular Diseases and Renal Diseases." Dr. Quine in his usual impressive manner clearly discussed this subject, showing from the anatomy of these organs, that a diseased condition might begin either in the arteries, heart or kidneys, giving the same set of symptoms, and affecting all three structures in a similar manner. He also showed how hard it is to determine which condition has been the primary one. These symptoms were briefly described, showing how each was produced, and the management of the conditions was briefly outlined. After this talk, the paper was discussed first by Dr. R. H. Smith of Seaton, who told of the difficulty of diagnosing the primary condition and how easily one or more of these conditions could be overlooked. The paper was further discussed by Drs. Scherrick and Graham of Monmouth, and Dr. Horrell of Galesburg.

This paper closed the afternoon's program, and a rising vote of thanks was given to Drs. Quine and Holmes for leaving their work and coming to Monmouth on this occasion.

In the evening, an informal dinner was given at the club, in honor of the guests and about thirty physicians remained for this part of the program. There were physicians present from seven counties, the total attendance being about sixty-five.

WINNEBAGO COUNTY

The Winnebago County Medical Society assembled in annual banquet at Nelson Hall, April 8, at 8 p. m. Thirty-five local and ten Beloit physicians were present. Dr. Emil Lofgren presided.

After partaking of an enjoyable feed some business was transacted. Three doctors, on application to the board of censors, and following their favorable report, were voted in as members of the society. Dr. Emmanuel Rundquist of Rockford, Dr. Biagio Francesetti of Rockford and Dr. C. O. Sheppard of Winnebago were the gentlemen admitted.

The reading of the minutes of the previous meeting was dispensed with. The president then introduced the speaker of the evening, Dr. E. A. Fischkin of Chicago, professor of dermatology at the Chicago Medical College. Dr. Fischkin gave the society a most interesting and instructive talk on the "Salvarsan Treatment and the Wassermann Reaction in Syphilis." He also mentioned the great advancement being made in Germany on just this subject. The doctor had recently visited Europe and had attended many of the larger clinics.

A vote of thanks was given Dr. Fischkin for his kindness and willingness to come to Rockford and address the society.

NEWS OF THE STATE

NEWS ITEMS

—The physicians of Moline have decided to ask the state society to meet in that city in 1914.

—A new hospital has been planned for Rochelle, and most of the funds required have been pledged.

—St. Joseph's Hospital at Bloomington is arranging to make extensive improvements during the coming summer.

—Dr. J. C. Dodds of Champaign has retired from practice, and has given his library to the public library of that place.

—The citizens of Hillsboro have arranged to erect a hospital on property situated on School Street and known as Lake View.

—Dr. Frederick F. Garrison has returned to Chicago and resumed the practice of medicine with an office at Suite 907, 7 West Madison Street.

—Two doctors who had tied for the office of alderman at Monticello, east lots and the winner was Dr. W. G. McDeed, the Progressive candidate.

—Dr. J. O. Salyers of Springfield was held to the grand jury under bonds on the charge that he had performed an operation on Mrs. Opal Mayhew, which resulted in her death. Dr. Salyers was released on \$5,000 bonds.

—Dr. Robert McKenzie, son of Dr. and Mrs. William R. McKenzie of Chester, Ill., and a graduate of Smith Academy, St. Louis, Mo., of the University of Michigan in 1907, has the distinction of being the youngest man ever elected to the office of mayor of Ann Arbor.

—The Danville Physicians' Club have been giving free "movies" to the public of that city at one of the theaters on Sunday afternoons on the subjects relating to the preservation of public health. No admission is charged, but the voluntary contributions have been found to be sufficient to pay expenses.

—Rush Medical College Alumni Reunion will this year be a distinctive feature at the coming meeting of the State Association at Peoria, May 20, 21 and 22. Dr. A. B. Will, Class '82, Nestor of the local fraternity, and his able corps of Rush graduates, have already made all suitable arrangements for a luncheon during the noon recess. *Full and plenty and a good reunion is assured.*

—The Springfield Open Air Colony, a sanatorium and school for the tuberculous, will be opened early in May under the medical direction of Dr. George Thomas Palmer. While this will be a private institution and entirely under Dr. Palmer's control, its establishment has been made possible through the financial support of a number of prominent Spring-

field people. The colony occupies a tract of ten acres in the outskirts of Springfield, within an easy walk of the city car lines. The main building, which is now completed, contains sleeping quarters for sixteen patients, and living rooms, dining room and kitchen for fifty. The colony will operate at rates as low as possible in a high class, self-sustaining institution, and will remain pledged to the philanthropic work of the Springfield Tuberculosis Association, whose medical work Dr. Palmer has conducted for two years past.

—A bill proposed by Senator Francis and adopted in the Iowa Senate, defining unprofessional conduct on the part of physicians and surgeons for which certificates may be revoked has passed the House. The following are defined by the bill as unprofessional conduct:

1. Procuring, aiding or abetting an abortion.
2. Employment of "cappers" or "steerers" to get business.
3. Obtaining a fee on representation that an incurable disease may be cured.
4. Betrayal of professional secrets to the detriment of the patient.
5. Advertising untruthful or improbable statements.
6. Advertising any kind of "monthly regulators" for women.
7. Conviction of an offense, involving moral turpitude.
8. Wilful neglect of a patient in a critical condition.
9. Accepting any fee as witness in case arising from professional knowledge.
10. Demanding or accepting an exorbitant fee for a surgical operation.
11. Splitting fees with another person without knowledge of the patient or his caretaker or guardian.
12. Knowingly misstating cause of death, except where such statement would be libel on the deceased or an injury to his survivors.

The bill does not make it unprofessional for the doctors to advertise in the newspapers. This is a code of their own.

PERSONALS

Dr. H. N. Giles has removed from Polo, Ill., to Hope, Ark.

Dr. Erwin Dudley of Decatur will locate at Cerro Gordo, Ill.

Henry W. Clifton, M.D., has removed from Lacon to Watseka.

Dr. Carl Rochow will engage in the practice of medicine at Rock Island, Ill.

Dr. J. W. Rendleman of East St. Louis fell from a stepladder and fractured both of his wrists.

Dr. William A. Haskell of Alton is making his way home from Tampa, Fla., by automobile.

Dr. J. P. Comegys of Rock Island succeeds Dr. G. L. Eyster as Post Surgeon at Rock Island Arsenal.

Dr. S. J. Beeson, Chicago, has returned from a trip to Australia, New Zealand, South America and the West Indies.

Dr. W. W. Haven and family, who recently moved to Collinsville, have moved back to their old home at O'Fallon, Ill.

Dr. E. C. Lemen of Upper Alton had a narrow escape when his house caught fire last month. He was carried out uninjured.

Dr. F. W. Wileox of Minonk, Ill., is recovering from an operation for chronic appendicitis and adhesions of the colon at the Henrotin Memorial Hospital, Chicago.

Drs. C. Martin Wood and S. E. McClelland of Decatur have gone to Europe, where they will take up post-graduate work in the hospitals in London and Berlin.

Dr. J. Morgan Sims, coroner of Madison County, was elected second vice-president of the State Coroners Association, at a meeting held in Springfield recently.

Dr. John Beatty, a former resident of Granite City, is now in active practice in Sultan, Wash. He was recently married to Miss Grace Horney of Everett, Wash.

Dr. Harry E. Lemen of Alton is an applicant for the position of Commissioner to the Panama Exhibition in San Francisco, in 1915, to represent the state of Illinois.

Dr. Frederiek F. Garrison of Havana has transferred his practice to Dr. E. J. Carey of Chicago, and will remove to 348 East 41st Street, Chicago, where he will take up the practice of medicine.

Dr. and Mrs. J. L. R. Wadsworth of Collinsville, who passed their golden milestone on March 10, were the recipients of the congratulations of a host of friends, presented by person, by letters and by telegrams. A golden loving cup was presented by the members of the First Presbyterian Church, of which the doctor is an honored trustee.

The Marion County Medical Society held a rousing meeting in Centralia on February 29. Dr. D. N. Eisendrath of Chicago and Dr. William Engelbach of St. Louis were the principal speakers. Dr. Fiegenbaum of Edwardsville, by special invitation, gave an address to the general public at the First Methodist Church in the evening.

REMOVALS

Dr. H. W. Hand of Whitehall has removed to Granite City, Ill.

Dr. J. M. G. Carter of Chicago has removed to Los Angeles, Cal.

Dr. Earnest A. Green has removed from Crossville to Grayville, Ill.

Dr. F. B. Miller has removed from Vergennes, to Pinckneyville, Ill.

Dr. R. B. Yoder has removed from Cerro Gordo to Cass Lake, Minn.

Dr. George A. Lierle has removed from New Berlin to Burton, Ill.

Dr. Wm. H. Holmes has removed from the Kankakee State Hospital to Chicago.

Dr. Henry N. Barth has removed from Davis to 1124 Oakdale Avenue, Chicago, Ill.

Dr. A. L. Parke has removed from Beardstown to 2584 Evans Street, Omaha, Neb.

MARRIAGES

DAVID E. MONASH, M.D., to Miss Edyth Mayer, both of Chicago, April 8.

WALTER ANTHONY STUHR, M.D., to Miss Gladys Caroline White, both of Chicago, April 2.

FLOYD BURKE RILEY, M.D., Chicago, to Miss Beulah Nye Bennison of Los Angeles, Cal., at Cedar Falls, Iowa, April 24.

CLESSON CUSHMAN ATHERTON, M.D., Elgin, Ill., to Miss Lucy Rose Thompson of Springfield, Ill., at Quincy, Ill., March 11.

DEATHS

ED. MASON, M.D., of Arthur, Ill., died at St. Mary's Hospital, Decatur, Ill., March 24, 1913, following an operation for appendicitis; aged 40.

ALBERT LAWRENCE COLLINS, M.D., Medical College of Indiana, Indianapolis, 1883; died at his home in Long Creek, Ill., February 4; aged 52.

GEORGE W. JOHNSON, M.D., Bennett Medical College, Chicago, 1879; for many years a practitioner of Lewistown, Ill., died at the home of his daughter in Kansas City, Mo., April 3; aged 79.

CLARK H. CARR, M.D., died at his home in Cowden, Ill., April 18; aged 99 years. Dr. Carr had been a resident of Cowden for nearly forty years. Seven children, two sons and five daughters, survive.

HENRY R. KERN, M.D., Secretary of the Kankakee County Medical Society, a practitioner of Kankakee, died at his home in Dwight, Ill., March 28, after a five-weeks' illness of carcinoma of the stomach.

J. C. SNIVELEY, M.D., formerly of Cuba, Ill., but for several years past a resident of Fruitdale, Ala., died April 20, 1913. The remains were brought to Cuba for interment. Dr. Snively was born Aug. 29, 1865.

EVERT EVERTSON TRACY, M.D., Albany (N. Y.) Medical College, 1891; a member of the Illinois State Medical Society and Association of Military Surgeons of the United States; Captain M. C. Illinois National Guard; died at his home in Prairie View, Ill., April 9, from nephritis; aged 43.

JOSEPH L. KITCHEN, M.D., Northwestern University Medical School, Chicago, 1869; a veteran of the Civil War; formerly a practitioner of

Wyanet, Ill., and Sentinel, Butte, N. D., died at his home in Harvey, Ill., March 20, from nephritis; aged 69.

WILLIAMSON C. PACE, M.D., Washington University, St. Louis, 1854; a surgeon during the Civil War and a practitioner of Ashley, Ill., for half a century; died at the home of T. H. Benton in that place, March 25, from cerebral hemorrhage; aged 82.

Book Notices

MAKING GOOD ON PRIVATE DUTY.—By Harriet Camp Lounsbury, R.N., president West Virginia State Nurses' Association, Sanitary School Inspector for Charleston Independent School District. 208 pages. Cloth. \$1.00 net; post-paid \$1.10. J. B. Lippincott Company, Philadelphia.

Mrs. Harriet Camp Lounsbury has written a book for private nurses which we are sure will receive a warm welcome. She is well fitted to survey the subject from many points of view, for not only has she been in the past a nurse herself, but she is also a doctor's wife and a mother, so that she can add the doctor's and the patient's points of view to that of the nurse. She has a happy way of making the nurse's problems her own and of treating them wisely and sympathetically.

A METHOD OF MEASURING THE DEVELOPMENT OF THE INTELLIGENCE OF YOUNG CHILDREN. By Clara Harrison Town, Ph.D. Second edition. Price \$1.00. Chicago Medical Book Co.

We are glad to note that Dr. Town's translation of this excellent work has been received with considerable enthusiasm by educators and students of mentality. The second edition is much more carefully edited and printed. It is now on the market and can be obtained from the Chicago Book Co. Price \$1.00. Physicians will find it very valuable in their practice among children, and teachers universally should have a copy in their possession for consultation.

WHEN TO SEND FOR THE DOCTOR AND WHAT TO DO BEFORE THE DOCTOR COMES. By Frieda E. Lippert, M.D. and Arthur Holmes, Ph.D. Price \$1.00. J. B. Lippincott Co., Philadelphia and London.

This work of 250 pages is an excellent guide to the parents and the orphanage officials regarding slight ailments which afflict children. A copy placed in the hands of every family by the family physician will save the doctor many steps and pay for itself in a short time by the valuable advice contained therein. It is one of the most excellent books for the laity which is now being put on the market.

THORNTON'S POCKET MEDICAL FORMULARY. By E. Quin Thornton, M.D. Tenth edition. Price \$1.50 net. Lea & Febiger, Philadelphia and New York.

This formulary contains 2,000 prescriptions representing the latest and best therapeutics, arranged alphabetically under headings of the various diseases for quick reference. Full annotations, directions and details and a most useful, wallet-sized volume in leather binding.

THE CAREER OF DR. WEAVER. By Mrs. Henry W. Baekus. Cloth, decorative, illustrated. L. C. Page & Co., Boston, Mass. Price, \$1.25.

High craftsmanship is the leading characteristic of this novel, which, like all good novels, is a love story abounding in real palpitant human interest. The characters, each clear, vivid and outstanding, are worth-while folk who breathe

and speak and do things. The madonna in the market place, the white-capped nurse in the hospital, the surgeon in the flush of achievement, the medical fledgling under stress of high endeavor, the butterflies of society in their flittings and the great public with pulsating temples are staged with effectiveness. There is a prophesy of wholesomer themes and saner thoughts in modern fiction shown in this instance by the utilization, and the effective utilization of such subjects as great health movements, philanthropic movements and eugenic movements, both to adorn the tale, and in doing so to point many a moral.

The most startling feature of the book is the way its author has torn aside the curtain and revealed certain phases of the relationship between the medical profession and society. Certain ethical obliquities and certain moral obtundities are exposed in their nakedness. The proprietary hospital, the public clinic, the commercial medical essay, the self-exploiting doctor and the vice of fee-splitting are here just considered among the various sinister influences now operative in our social complex. The exposé will cause the brow of many a lay reader to become corrugated into an interrogation point. It will cause many an honest doctor to flush with indignation or to bow his head in shame. But he will see that Mrs. Backus has dealt with facts; in short, that she has followed the golden rule of Balzac, who insisted that "in the writings of great novels every element of the great falsehood must be true."

It may be said that the hero, Dr. Jim, exemplifies those very impulses which stand to-day for the most progressive type of physician—the larger physician, the man, who being a physician, is at the same time a full-fledged citizen and something more. The chapter on "The Doctor in Politics" is well worthy of thoughtful consideration. There is not a physician in the United States who would have his profession properly understood by the public, who ought not to see to it that this book is placed in the hands of every member of his clientele.

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ORIGINAL ARTICLES

LIFTING THE MANTLE OF RESERVE *

L. H. A. NICKERSON, M.D.
QUINCY, ILL.

It has been the usual custom for the retiring president to deliver before this body a highly scientific paper expressed in professional terms. If the members of this society will pardon me, I will deviate from the usual course and direct my talk to the laity, first thanking the society for the honor conferred on me and also for the support given in my endeavor to make this state society the largest, most compact and best organized society in the Union. I shall not try to mystify the uninitiated by reciting recent and difficult operations of the surgeon in technical language — such as the extra-peritoneal nephrectomy — but will tell in plain every-day words of the removal of the kidney without dividing the peritoneum. The gynecologist would tell of supravaginal hysteromyomectomy, meaning in plain terms the removal of the womb with a fibroid tumor through the abdomen, or again, the physician invites your attention to the cure of furunculosis by giving hypodermically staphylococcus aureus bacterin, which means that to be cured of boils, the remedy is vaccination with the killed germs of that disease. I want to get in touch with the public, so I would ask the ladies and gentlemen to give me their close attention. Our profession in the past few years has been greatly abused, maligned, misrepresented and called a close trust. The profession has been too modest in the past in not taking you into confidence, so you must pardon me for appearing somewhat egotistical. Just as soon as we have introduced a bill in the State Legislature or the National House of Representatives, just so soon the interests by paid lobbyist commence a tirade of abuse, calling the organized profession a trust working for its own gain.

* President's address, delivered at the Sixty-Third Annual Meeting of the Illinois State Medical Society, held at Peoria, Ill., May 20-22, 1913.

Now let us examine the true facts of the case. The American Medical Association is composed of units, of which the Illinois Medical Society is one. To quote the constitution of the American Medical Association: Article 1. The name and title of this Association shall be the American Medical Association.

Article 2. The object of this Association shall be to promote the science and art of medicine; contributing to this end, the Association shall endeavor to unite into one compact organization the medical profession of the United States for the purpose of fostering the growth and the diffusion of medical knowledge, of promoting friendly intercourse among American physicians, of safe-guarding the national interest of the medical profession, of elevating the standard of medical education, of securing the enactment and enforcing of just medical laws, of enlightening and directing public opinion in regard to the broad problems of hygiene and of representing to the world the practical accomplishment of scientific medicine.

The code called "The Principles of Medical Ethics," which the Association has adopted, says, Section 1, "The profession has for its prime object the service it can render to humanity; reward or financial gain should be a subordinate consideration. The practice of medicine is a profession. In choosing this profession an individual assumes an obligation to conduct himself in accord with its ideas.

"Chapter 2; Section 3. A physician should be an upright man, instructed in the art of healing; consequently, he must keep himself pure in character and conform to a high standard of morals, and must be diligent and conscientious in his studies. He should also be modest, sober, patient, prompt to do his whole duty without anxiety; pious without being so far as superstitious; conducting himself with propriety in his profession and in all the actions of his life.

"Section 5. It is unprofessional to receive remuneration from patents for surgical instruments or medicines; to accept rebates on prescriptions or surgical appliances, or perquisites from attendants who aid in the care of patients.

"Section 6. It is unprofessional for a physician to assist unqualified persons to evade legal restrictions governing the practice of medicine; it is equally unethical to prescribe or dispense secret medicines or other secret remedial agents, or manufacture or promote their use in any way.

"Chapter 3; Section 1. Physicians, as good citizens and because their professional training especially qualifies them to render this service, should give advice concerning the public health of the community. They should bear their full part in enforcing its laws and sustaining the institutions that advance the interest of humanity. They should cooperate especially with the proper authorities in the administration of sanitary laws and regulations. They should be ready to counsel the public on subjects relating to sanitary police, public hygiene and legal medicine.

"Section 2. Physicians, especially those engaged in public health work, should enlighten the public regarding quarantine regulations: on

the location, arrangement and dietaries of hospitals, asylums, schools, prisons and similar institutions, and concerning measures for the prevention of epidemic and contagious diseases. When an epidemic prevails, a physician must continue his labors for the alleviation of the suffering people, without regard to the risk to his own health or life or to financial return. At all times, it is the duty of the physician to notify the properly constituted public health authorities of every case of communicable disease under his care, in accordance with the law, rules and regulations of the health authorities of that locality. Finally, these principles are primarily for the good of the public, and the enforcement should be conducted in such a manner as shall deserve and receive the endorsement of the community."

Let us inquire if the profession is a trust? The By-Laws of the State Society, Chapter X, Section 5, says in part: "Every reputable and legally registered physician who does not claim to practice or lend his support to any exclusive system of medicine, shall be entitled to membership." This clause refers to membership in a county medical society. Becoming a member of a county medical society makes the physician a member of the state society, and by the payment of \$5 for the *Journal A. M. A.*, his name is placed on the roll of the American Medical Association, and he has all the rights and privileges of a member. Now, ladies and gentlemen, these terms are very broad and do not look very much like a trust; remember, any reputable registered physician, who does not practice any exclusive dogma, may become a member. This should make it clear to an unbiased mind, that the American Medical Association is not a trust. Senator Owen, in a recent speech in the United States Senate, said: "If the American Medical Association is a trust, it is the only one in existence which is concerned in diminishing its own revenue and destroying its own foundation. Such a trust as that is a very noble trust and one that deserves encouragement." Then again, by following our creed we ought to be a pretty good lot of men. Of course, we are bound to have some renegades in the ranks, just as the church has black sheep in the fold. Just because the deacon of a church is a degenerate and goes wrong, is no reason that the church as a whole should be denounced and held unworthy of confidence. Let us see if we deserve abuse? What has the profession done for the public? What sacrifices has she made in the interest of humanity? Has the profession made good? We will only give a few examples out of many.

Dr. Edward Jenner, in 1796, discovered vaccination for the prevention of small-pox. This loathsome disease had been looked on with dread. It had carried away whole communities, leaving those who survived with fearfully disfigured faces. To-day no one dreads the disease, knowing that we have the remedy to curtail any epidemic that may appear. Vaccination means practically no small-pox. To show how prevalent small-pox used to be, it is only necessary to quote an old common saying, that "few escape love and small-pox." Dr. Jenner's name will always be honored by all men and for all time.

The germ of diphtheria was discovered by Klebs in 1883. In 1890, Von Behring discovered the antitoxin in the blood, which enabled Roy, in 1891, to develop a curative serum, thus robbing diphtheria of its ravages and reducing the mortality record from 40 or even 80 per cent., down to 10 per cent. If this serum is administered early, say within twenty-four hours of the initial appearance of the disease, the record is reduced as low as 1 per cent.

Dr. Simon Flexner within the past few years evolved a serum that reduced the mortality of cerebrospinal meningitis from 70 to 25 per cent. In 1880, Laveran, a French army surgeon, described a parasite found in the blood of patients suffering with malaria, and in 1898, Dr. Patrick Manson demonstrated that a variety of mosquito known as anopheles was the host, and by its bite inoculated persons with the parasite, causing malaria in its various forms. Exterminate this variety of mosquito and malaria vanishes.

To Dr. Carlos Finlay of Havana must be given the credit of advancing the theory of transmission of yellow fever by the mosquito. He announced this theory in 1881. In 1890, it remained for a Board of the United States Army Surgeons, composed of Drs. James Carroll, Walter Reed, Jesse M. Lazear, non-immune, and Aristides Agramonte, immune, to demonstrate that yellow fever is produced by the bite of a mosquito, known as the stegomyia. Havana had always been known as a hot-bed for yellow fever, never in the healthiest season being free from some scattered cases; at times becoming epidemic with fearful mortality. This disease at the same time was exported to all adjacent seaport towns. Who has not heard of the fearful ravages of this disease in Philadelphia and Boston. During the American occupation of Cuba in 1890, yellow fever became quite prevalent among the American troops located in Havana. This army board of medical officers was ordered to Havana to investigate the cause and propagation of yellow fever. To test the mosquito theory and also the theory of contagion (which a majority of physicians and laymen believed), they thought it would be but fair that they themselves should be the first subjects to undergo the crucial tests. As the theory of contagion would take more time to demonstrate than the mosquito theory, they decided to first take up the latter theory. Dr. Reed at this time was called to the States. The other doctors submitted themselves to be bitten by mosquitoes of the variety known as stegomyia, brought from a healthy district. The result was negative. After a period of several weeks, these same mosquitoes were allowed to bite and fill themselves with the blood of persons sick with malignant yellow fever. Then Drs. Carroll and Lazear allowed themselves to be bitten by those infected mosquitoes. At the end of three or four days, the doctors were both down with severe attacks of yellow fever. Dr. Lazear died in convulsions, and Dr. Carroll recovered after a severe protracted illness. Dr. Carroll never fully recovered his health and has since died as a result of this crucial experiment, a martyr to science. These facts were fully and positively corroborated by other volunteers, non-immune. To test the theory of contagion, three American volunteers, non-immune, were

placed in a small, closely-screened room. They slept there twenty nights in contact with blankets, gowns, sheets and pillow cases which were soiled with bloody stools, black vomit and other excreta of patients dying with yellow fever. More soiled linens used by patients were brought over every day from a yellow fever hospital. These non-immunes all remained well, proving the non-contagion of this disease. These experiments were repeated with like results. The knowledge that malaria is communicated by the bite of the infected anopheles and yellow fever by the bite of the infected stegomyia, is but a step forward. Then Dr. Gorgas, during the American occupation of Cuba started a crusade to exterminate the stegomyia in Havana by draining all the ponds and killing the mosquitoes. The following summer this city was free from yellow fever and has remained so. The United States government applied these recently established facts to the building of the Panama Canal, which had been recently taken over from the French by the United State government. Dr. Gorgas, who had cleaned up Havana, was sent by the United States government to that zone for this important sanitary work.

Dr. Gorgas made good, so much so, that to-day there is not a stegomyia or an anopheles existing along the canal. In this locality yellow fever and malaria have ceased to exist. When these two varieties of insects have been exterminated, neither yellow fever nor malaria can gain a foot-hold in any locality. The average number of employees under French control was 10,200, and the deaths were 22,189. During nearly the same length of time under American control, the average number employed was 32,000, and the deaths were less than 5,000. It is a matter of history that when the French attempted to build the Panama Canal, every tie laid in building the railroad which parallels the canal was a monument to the life of a laborer, given up to yellow fever—a preventable disease. The Panama Canal Zone to-day is known as one of the healthiest settlements on the globe. No locality has a mortality so low as this zone. This is not guess work, but a fact that statistics prove beyond cavil.

Is it reasonable to expect that the United State government would turn over the sanitation of the Canal Zone to any person, except a physician educated along the lines of sanitation, acting under the direction and authority of the board of health of that zone? What would any path or cult, not trained along the lines of sanitation, know about the prevention of yellow fever or malaria? You might expect them to make as great a mess of it as the writer would, if placed in charge of the editorial columns of one of the great daily papers. All right-minded citizens will acknowledge that the health of those living along the canal should be in charge of a trained, educated physician: one who is able to pass a successful examination on sanitary lines, under a rigid examination of the Board of Health of the Canal Zone. It is the prevention as well as the cure that the public is now interested in. Dr. Carroll, in giving up his life to this work, left a widow with several children. There was a heavy mortgage on their house. The American Medical Association took this matter up with the profession, lifted the mortgage, leaving a considerable balance in the hands of the widow. Can you blame us in giving

all honor to the memory of Drs. Carroll, Reed and Lazear? Their names are indeed sacred to us.

The germ of typhoid fever (typhoid bacillus) was discovered by Eberth. The first treatment for the prevention of this disease by vaccination was given by Fränkel in 1893, and the treatment was further continued by Pfeiffer and Keller in 1896. It remained for the United States Army Surgeons to fully exemplify the benefit derived from the method of vaccination with the dead germs of this disease. In the recent manoeuvre of a division of our army in Texas, in 1891, when 12,801 troops were encamped near San Antonio, only one mild case of typhoid fever developed in a period of four months; these troops had all been vaccinated. That single case of fever had not fully completed the treatment, had only received two of the three doses required, and that mild case recovered with no other cases in sight. These troops had the liberty of visiting San Antonio, drinking the city water, eating in all kinds of restaurants, also eating exposed fruits. Compare this result with the citizens of San Antonio, among whom, during the same period, forty-eight cases were reported with nineteen deaths. Then again compare the troops located in Texas in 1911, with those in camp at Jacksonville, Fla., in 1898, during the Spanish War, before the vaccination method came into vogue. The number of troops in camp in Florida was 10,789. In the same period of time (four months) there developed 4,422 cases of typhoid fever, with a mortality of 248. Compare the figures and you will at once realize the great benefit gained by the simple method of vaccination. It is a very simple operation and only in an exceptional case, disables the soldier from ordinary duties. It does not cause nearly so much irritation or inflammation at the point of insertion as vaccination against small-pox.

The profession has discovered the cause of the following diseases: Plague, cholera, tuberculosis, pneumonia, syphilis, gonorrhea, typhus fever, mountain fever, and many other diseases. Recently two physicians, in investigating the two latter diseases, were stricken with the fever and gave up their lives in the interest of humanity. We know the cause of these diseases, but as yet have not found the cure. They are preventable, and the cure will surely come, as the physicians are still battling for it and are ready to lay down their lives.

I shall not attempt to describe the brilliant operations of the surgeon and specialist in their several lines, such as removal of the kidney, gallstones, ovaries, uterus, a portion of the intestines, and a portion of that delicate organ, the brain. These operations, with all modern improvements, are now done without much danger to human life; formerly such operations were considered too serious to warrant such radical procedure.

The physicians who gained renown by their discoveries were not rich men; they worked for the love of science. Jenner is the only one I recall who was amply rewarded by his government. He was granted by Parliament £30,000 some ten years after he gave to the public his discovery of vaccine against small-pox. Our great government granted the widow of Dr. Carroll the magnificent sum of fifty dollars per month in recognition

of his successful efforts in the discovery of the cause of yellow fever. Just think for a minute what these two men have done for the race. Dr. Jenner's vaccine has saved thousands of lives from small-pox, and eliminated epidemics of this disease. Dr. Carroll has not only saved thousands of lives, but has enabled the United States Government to build the Panama Canal with a minimum death loss. Many dollars have been gained to commerce in doing away with "shot gun quarantine," with the necessity of burning and disinfecting articles of commerce, that have in any way come in contact with yellow fever. Formerly, every ship that came into port from any locality where yellow fever was suspected, had to be held in quarantine for many days; then had to undergo fumigation. This is a thing of the past. Millions of dollars have been saved to the United States Government alone in not having to guard commerce so closely as formerly. The causes of yellow fever and malaria being known, the lines of civilization can be extended into new and unknown countries without the fear of dreadful loss of life from these fevers. I take it for granted you all realize that the physician does more work for charity than any other class of men. Did these men, as soon as they found out the cause of these deadly diseases, strive to keep it secret in order to enrich themselves? No, not by any means. They had the ethics of their profession at heart. They gave their discoveries at once to the profession and to the public. Have the surgeons patented the instruments they have devised to perform delicate and dangerous operations? Have the physicians patented the serums or the remedies for the cure of disease? Not by any means — they are free for all that need them. You have never heard of a physician running away from his patients during an epidemic of malignant disease.

Now, let us take up the opposition we encounter in enacting laws for the prevention of these dreadful diseases, which so often have occurred in epidemic form, sweeping away whole communities; also the opposition to experiments we make on animals to find the cause and the remedy of disease. Certainly one human life saved is worth more than many animals that may be sacrificed in our experiments. As an illustration, due to the hostility of the interests, it took five years to get the Pure Food Law out of the hands of a committee (to whom it had been referred) before we actually got it before Congress. The American Medical Association had striven for years to have such a law passed, and kept up the propaganda of education before the American people until the bill became a law. This law requires to be related on the label the exact amount of alcohol in patent medicines, the exact amount of opium, morphin, acetanilid or any other poison, to each ounce of a drug. The profession knows, and you know how many babies have been killed by giving Winslow's Soothing Syrup, which syrup contains morphin; that the drink habit has been formed by taking Peruna, which drug did contain 28 per cent. of alcohol. There is no excuse now for the mother giving this syrup to her infant, or for the prohibitionist taking Peruna, for the label on the bottle is required to state the exact amount of morphin and alcohol to each ounce of the syrup, and the exact amount of alcohol in

each ounce of the Peruna. The leaders of the so-called National League for Medical Freedom are men who have been discredited by the Pure Food Act, and to show the hostility of this body of men, who have the interest of patent medicines at stake, it will only be necessary to make mention of the fact relating to Peruna, which was claimed by the manufacturers to be a harmless medicine and a panacea for all ills to which human flesh is heir. Dr. Wiley claimed that the drug was misbranded and consisted mainly of alcohol, stronger than champagne, or any other wine. It is worse than poor whisky.

When the commissioners insisted that the makers should state on the package the exact amount of alcohol it contained, they were very indignant, but when they found they had to follow the letter of the Pure Food Act, they revised their formula by reducing the amount of alcohol contained in the drug, from 28 per cent. to 18 per cent., which fact is now printed on the label. This is only one example of the good work done by the Pure Food Act. Just such work as this accounts for the hostility of the interests and has resulted in the forming of the National League of Medical Freedom, a high sounding name, and one that no doubt has gained many innocent partisans. There is no doubt of the power of this organization with its vast resources furnished by the interests, and with the aid of the Yellow Press (who get a revenue from their advertisements) to delay any measures proposed for the protection of the public from impure, adulterated food and noxious patented medicine. I am told this league is not so strong now. To show the character of this League, I will quote from the editorial columns of *Collier's* of June 3 and 10, 1911, which says, in part, "B. O. Flower, one of the nine founders of the League and now in second term as president of it, was president of the R. C. Flower Medicine Company from 1885 to 1899. R. C. Flower is the notorious quack and general humbug, whose latest arrest was in 1908."

C. W. Miller, second vice-president of the League, was also one of its founders. He voted against a pure food bill, which, nevertheless, was passed in 1911, by the Iowa Legislature by a vote of 66 to 7. In 1907, Miller voted against an act to safeguard the public health by regulating the sale of patent and proprietary medicine, and in 1906, he voted against a bill to strengthen the law relating to the sale of poison, the bill passing by a vote of 71 to 5; also against other bills pertaining to pure food. This League for Medical Freedom announces officially that it had made Miller one of its directors because of his record in the Iowa Legislature. One more quotation from *Collier's*: "It would interest us to know whether the League can point out a single health bill, introduced in Congress, which it has not opposed." The proposed Department for Public Health, for which Senator Owen introduced a bill into the Senate, has been advocated by the American Medical Association for years. This bill has been determinedly opposed by the League with all its resources. This proposed department has been approved by Ex-president Roosevelt and Ex-president Taft, and has been incorporated into the platforms of all the great parties of this nation. It has also been recommended by

numerous societies in their national conventions. It should become a law, if for no other reason than to use its power to prevent the importation of epidemic diseases, such as plague, cholera, yellow fever, etc., into our seaport towns. The proposed Department of Public Health is bound to become a law in time, although it was defeated in the last session of the Senate by a tie vote. As the people become educated to its value, they will demand it of their law-makers. Truth and right are bound to prevail. Now one more word on education, and I am through. When you see such colleges as the National College of Chiropractic, now located at Grand Rapids, Mich., sending out the following: "You are welcome to finish the course in five days, or to devote two months to it if you wish. If you will send us the entire amount, \$25 at once, we will be very glad to send you the complete course of fifty lessons, and as soon as you have answered all the questions, we will graduate you. The price includes one of our handsome lithographed diplomas; it is in appearance almost the same as the best medical college diplomas. A person of ordinary ability ought to be able to make at least \$100 per week in the practice, if he advertises liberally, as it only requires a very few minutes to give the treatment, and the Chiropractic doctors usually charge from \$1 to \$2 per treatment." Can you blame the physicians for asking for a law requiring all medical colleges to give their graduates a higher standard of education and also a law requiring all doctors who are intending to practice medicine within the limits of your domain to pass the same examination before the State Board of Health? We are not free from low-standard colleges in this state; they should be wiped from the map by legal enactment. I believe our profession has made good, and is entitled to your good will and active support in trying to have enacted laws pertaining to medical and sanitary matters.

I venture an apology for the character of my talk, for there are not many doctors that would appear before you and throw off the mantle of reserve, to tell what the profession has done and is doing in the interest of the people. I thank you for your attention.

BACTERIOLOGIC RESEARCH IN ITS RELATIONS TO GENITO-URINARY SURGERY *

G. FRANK LYDSTON, M.D.

Professor of Syphilology and Genito-Urinary Surgery, Medical Department,
University of Illinois

CHICAGO

Modern bacteriologic and pathologic research must be credited with much of our progress in genito-urinary surgery. I will not attempt even a résumé of bacteriologic research as bearing on the micro-organisms found in the tissues and secretions of the genito-urinary apparatus in various conditions, but will speak merely of some of the most important. I will not attempt to settle the question whether the organisms that are constantly found in the normal secretions of the genito-urinary tract are

*Read at a meeting of the Chicago Medical Society, Nov. 27, 1912.

causal factors in pathogenesis, or determine the precise relation of heterogenous organisms to genito-urinary pathology. The relation between normal germs and pathogenic germs must be decided by practical microbiologists, and I believe with due regard to evolutionary law.

Infection of the urinary way includes many and diverse forms of disease, some of which admit very arbitrary differentiation of microbial infection, but many of which are decidedly "mixed." These processes range in severity from a general secondary infection, which results in effusions and perhaps suppuration in joint cavities, to simple local processes, such as prostatic irritation. In the one the objective signs are striking and characteristic, in the other there may be no objective signs. These conditions, however, are alike due directly or indirectly to microbial action.

The diseases now known to be of microbial origin were clinically well known to the surgeons of the olden time. They recognized certain suppurative conditions of the genito-urinary tract, and the relations of certain inflammations of the urethra, bladder, ureter and kidneys to each other. They were familiar with gonorrhea, stricture, calculous affections and urinary obstructions and suppression. The pathologic results of injury, dietetic excesses, the gouty and rheumatic diatheses, the pressure of the pregnant womb and various medicaments taken by the mouth were familiar to them. Above all causes of genito-urinary disturbances the old-time surgeon held exposure to cold and sudden changes of temperature. We moderns know that these factors are merely predisposing and are not sufficient explanations of genito-urinary pathology. The clinician of former days confused the *propter* and the *post* in a most natural way. The causes of disease which he regarded as principal and primary are now known to be merely accessories.

In due time pathologists noted in addition to local inflammations and suppurations of the genito-urinary organs certain accidents of a constitutional or febrile character. Only within the last fifty years, however, has even our clinical knowledge of these conditions been at all clear. To Velpeau and Civiale is due the credit of the original stimulus for the scientific study of these conditions. To enumerate the various authors who have followed in the footsteps of these masters would be wearisome: not to mention, however, the work of Hallé, Keyes and Reginald Harrison would be unjust. Guyon has given a very exhaustive bibliography of this subject.¹

At the time of the résumé by Halle² there were four principal theories of general urinary infections. The most ancient was that of Chassaignac and Icard (1856), who taught that the serious accidents in the subjects of genito-urinary disease were due to phlebitis of the periurethral erectile tissue and the periprostatic veins. This implied that all purulent infections secondary to genito-urinary operations were purely vascular. A second theory, that of Perreve, Bonnet, Reybard and others, implied a depression of vital force by nervous shock due to urethral "insult." Later, Verneuil

1. Guyon: *Lec. Or. Clin. Sur. les Mal. des Voies Ur.*

2. Hallé: *Annales des Mal. des Org. Gen. Ur.*, February, 1890.

ascribed these various conditions to pathologic changes in the kidneys, which organs were more or less disorganized and functionally deranged by nephritis, with resulting defective elimination. By reflex impressions on the urinary apparatus the kidney became further modified by congestion or hyperemia. Velpeau's theory, the first formulated, was that the constitutional accidents in genito-urinary practice were due to the absorption of certain principles of the urine. It is peculiar that this old-time theory was more nearly than any other in accord with modern views. Velpeau's pupils, notably Civiale, and later, Gosselin, held that the urine itself was absorbed at injured or pathologically altered points in the mucosa, causing a pathologic alteration of the blood. That such absorption was possible in pathologic conditions was early shown, both by experience and experimentation.

The truth regarding urinary infection escaped these early investigators only because of their ignorance of bacteriology. The fact of urinary infection was well known to Velpeau; the cause of the toxicity of the urine remained to be shown by modern research.

Can we overthrow entirely any one of the four theories enumerated? There is, it seems to me, a tendency to ignore everything save bacterio-urinary infection. This I do not believe to be logical or founded on sound pathologic knowledge. Is not phlebitis sometimes the initial process in general infection from operations on lesions of the genito-urinary tract? We know that general septic processes elsewhere may begin with phlebitis. *The fault of the phlebitis theory lay, not in fallacious pathologic deductions—save in so far as the theory was made to apply to all secondary genito-urinary infections—but in ignorance of the pathogenic organisms which caused the phlebitis.* There is little doubt but that lymphatic absorption bears a very important relation to the septic infection that sometimes results from genito-urinary operations. A striking analogy is found in the metro-lymphangitis which often ushers in general septic infection in the puerperium. I am inclined to attribute relatively greater importance to venous than to lymphatic absorption in accidents following operations on the genito-urinary organs, but the fact remains that general sepsis may take its points of departure in a septic lymphangitis. It would, of course, be natural to expect absorption by the veins to result more quickly in general septic infection than in the case of absorption by the lymphatics. It is well to remember the probability that absorption via the veins is not necessarily followed by a phlebitis. *Rapid general and fatal sepsis may occur before perceptible phlebitis has had time to develop—where vitality is low or the dose of sepsis large. Virulent local reaction is likely to be nil.*

In considering the relation of sepsis to the accidents of genito-urinary practice, it must be remembered that the absorptive power of the vesical mucosa is slight, while absorption by even the unbroken urethral mucous membrane readily occurs. The intact epithelium of the vesical mucosa does not readily absorb toxic or other materials even when they have remained in the bladder for some time.

Can we justly reject altogether the theory of a nervous element in morbid phenomena resulting from manipulations of the genito-urinary tract, even in cases where general infection plainly exists? The influence of the nervous system is seen even in urinary toxemia. Neuropathology may eventually be found to occupy a very prominent place in infectious diseases of all kinds. We see cases of so-called urethral or urinary fever in which the point of departure is not the action of pathogenic micro-organisms, but a distinct nervous shock. For example, a patient experiences a chill while undergoing the simple operation of urethral exploration, or perhaps a few minutes after the operation is completed. This may pass off or may be followed by a succession of chills, or even by fever and sweating. Can the theory of the absorption of toxic principles from the site of the urethral lesion always explain the beginning of such cases? If so, how can we explain the chill that sometimes occurs on exploring a normal urethra? Furthermore — and this involves to a certain extent the theory of renal disease as an explanation of urinary fever — many cases have been reported where a simple operation on the urethra has been immediately followed by convulsions and death, or by fatal suppression of urine. We must recognize, it seems to me: 1. Urethral chill due to reflex spasm of the peripheral vessels. 2. A similar reflex spasm followed by active hyperemia, and finally congestion of the renal structure. This may eventuate in nephritis. 3. I believe also that we must recognize perverted tissue metabolism, with or without fever, as a result of shock from manipulations of the genito-urinary tract. To this I will again allude.

Be it remembered that patients who tolerate operations in other parts of the body may be severely shocked by the mere passage of a sound or catheter. That the psychic element is important I admit, but the shock is no less shock.

Recent observations in the chemistry of the urine go far to support this view, which was suggested in my lectures nearly twenty-five years ago. Feré³ and Voisin,⁴ in a series of careful experiments, demonstrated that a toxin was formed in the urine of epileptics during the convulsions, which, inoculated into various mammals, produced epileptoid convulsions. These observations are suggestive.

Many years ago I expressed the belief that abnormal tissue metabolism was an important factor in even some of the typic cases of general infection following genito-urinary operations. Recent developments in our knowledge of the various internal secretions have tended to strengthen that belief. This perverted physio-chemism due to surgical shock is especially marked in the glandular tissues. We have long known that mental emotions of various kinds, and such impressions on the nervous system as result in shock, may produce marked changes in the physiologic secretions, consisting either in an increased or diminished flow or obscure chemical changes in composition. Thus we may note an increase or decrease in the quantity of saliva, the lacteal secretion, gastro-intestinal

3. Feré : Progrès Med., Oct. 8, 1892.

4. Voisin : Bull. Gen. de Therap., Oct. 15, 1892.

secretion, the urine, or of the menstrual flow. A familiar illustration is the change in the quality and quantity of the lacteal secretion induced by anger or grief. This change, although incapable of demonstration by microscopic or chemical research (?), is most pronounced in its morbid effects on the child, serious bowel disturbances being a not infrequent sequel of the emotion of anger in the mother. Precisely what this change in chemical composition may be is an open question. Some years since I suggested that it might be analogous to the tyrotoxicon discovered by Vaughan in impure cow's milk. It is well-known that great care is necessary on the part of those who supply milk for the use of infants to prevent fatigue and various sources of excitement in the cows. It is well known, too, that sexual excitement in the cow renders the milk unfit for human food. If such change occurs in one secretion, probably all the physiologic secretions are similarly susceptible. In the case of the saliva the emotion of anger possibly causes the development of toxic principles, which may explain in part the serious results that ensue from the bite of an enraged human being. The difficulty of proving this theory in the present state of our knowledge of physiologic chemistry is obvious. The star rôle of bacteria and their toxins is, of course, admitted. In the case of the urine, surgical shock possibly may in some instances develop organic poisons in that secretion, analogous to the ptomains and leucomains discovered by Selmi and Gautier in both dead and living bodies, and which so closely resemble the vegetable alkaloids, nicotin, brucin and strychnin. The impregnation, primarily of the blood and secondarily of the nervous system, by the toxin or toxins, whatever it or they may be, possibly may explain the otherwise obscure and mysterious cases of death following the simple introduction of a sound. Reginald Harrison inclines to this view of the development of toxic urinary principles and consequent toxemia from their absorption.

We must admit that renal disease is the most important factor in the general accidents that result from genito-urinary operations and disease. Nephritis, after operations on these parts, is well recognized as the cause of a large proportion of surgical fatalities.

The relation of organic and functional disturbance of the kidneys to so-called urethral fever is most intimate. Probably no case of long-standing obstructive disease of the genito-urinary tract is unaccompanied by functional aberration of the kidneys, and in a large proportion of cases there occur later on, actual organic renal changes. This should be anticipated and given serious consideration in every case of chronic urinary disease. The immediate effects of the kidney difficulty may not be marked because of vicarious elimination by the skin and bowels, the means by which the system accommodates itself to the imperfect elimination of the constituents of urine. When, however, as a consequence of operations on the genito-urinary organs, surgical shock is produced, the function of the other emunctories is inhibited, the patient bleeds into his own internal vascular system, and hyperemia of the renal tissue results. This causes a strain on the renal circulation which the impaired organ cannot withstand, and as a consequence its functions are completely

suspended, with resultant uremia. This renal hyperemia may occur without general shock, as a hyperemia *ex vacuo* or otherwise. When ether irritation is superadded, the occurrence of a nephritis is not surprising.

To those who are familiar with the physiology of the nervous system in its more intimate relations to visceral functions, the association of renal disturbance and reflex irritation is not at all novel. In weighing this question it is necessary to consider the extreme sensitiveness and abundant sympathetic nervous supply of the genito-urinary tract.

Arnard and Butte, some years ago, in a paper entitled "Neuropathic Albuminuria," called attention to a type of albuminuria characterized by pre-existing and existing disturbances of different viscera innervated by the pneumogastric nerve. The irritation of the pneumogastric in these viscera is reflected via the vasomotor system to the kidneys, causing albuminuria. It has been found that renal aberration is very likely to occur from operations in certain special regions, notably the abdomen and genito-urinary organs. The intimate relation of the sympathetic ganglia, through their visceral filaments of distribution and their liberality of innervation of the genito-urinary organs, with the nervous supply of these regions, is a sufficient explanation. Nowhere are the cerebrospinal and sympathetic systems more closely associated than in these parts. To put it unconventionally, it is not surprising that all operative manipulations of the genito-urinary tract are likely to concuss, so to speak, the renal nerve supply, resulting in a reflex strain on the vascular supply, and, secondarily, on the nutrition and function of the kidneys.

I have thus endeavored to show that, valuable as are modern discoveries of the relation of pathogenic organisms to the serious secondary accidents of genito-urinary disease, we are not justified in discarding as rubbish the clinical observations and pathologic deductions of past generations of surgeons, whose eyes, fingers and logical minds were so productive of valuable material that we can only regret that they were not supplemented by the modern microscope.

The theory of urinary toxemia is still unquestionably the most important of all in its relations to the general accidents of genito-urinary practice. It is not generally believed, however, that the composition of the urine *per se*, or the absorption of that fluid, has anything to do with the resulting pathologic processes, but that they are invariably due to an alteration of the composition by micro-organisms of various kinds. The precise character of these micro-organisms has not in all cases been definitely settled. That the ordinary bacteria of decomposition have much to do with it is probably correct, and modern researches tend to show a special type of micro-organism in decomposing urine. The particular product of urinary decomposition which possesses general pathogenic properties has elicited much discussion. We no longer believe that the ammonia developed in decomposing urine produces general toxemia. That it may produce local pathologic changes is probable, but only in so far as it acts as an irritant. We cannot yet positively state that any particular chemical compound is the cause of toxemia from genito-

urinary disease, injury, or operation, but we are warranted, I think, in assuming that such compounds resulting from bacterial evolution are the principal etiologic factors, and, reasoning by analogy, we, perhaps, are safe in the inference that they are similar to, if not identical with, ptomaines and leukomains. The function, then, of microbial organisms in toxemias of genito-urinary origin would seem to be of an indirect character, it being the products of the micro-organisms, and not the germs *per se*, that produce the difficulty. But there are, of course, cases of general infection that are unquestionably due to special types of micro-organisms, ordinary pyogenic microbes, and the colon bacillus especially playing an important rôle. We have arrived at a point where the importance of the colon bacillus alone would warrant the devotion of an entire evening to its discussion.

Regarding the presence of a specific type of micro-organism as a cause of general urinary infection, a number of varieties of microbes have been observed by various investigators in pathologic urine and in surgical lesions of the kidneys.

Pasteur, the great pioneer in bacteriology, suspected the truth regarding urinary infection over thirty-five years ago. In 1875, he asserted that pathogenic microbes accidentally introduced into the bladder were the cause of urinary infection. Before the Parisian Academy he said: "If I had the honor to be a surgeon, I would never introduce an instrument into a patient's bladder without having observed the most rigid precautions to avoid the introduction of germs from the external atmosphere."

Most of the various conditions embraced under the term "surgical kidney," are unquestionably the result of infection from the more external portions of the genito-urinary tract. Ascending nephritis was long ago shown by Klebs, Virchow and others, to be due to microbial infection. The microbes, they claimed, entered the bladder, ascended the ureters, infected the pelves of the kidneys, and even penetrated into the secreting structure itself. Lancereaux showed that renal abscesses under such circumstances contained the same microbes that were found in pathologic urine. Microbes have been found by many observers in pyelonephritis, these organisms being in some instances bacteria, and in others micrococci. The streptococcus pyogenes has been found in conjunction with various forms of microbes, both bacteria and micrococci, the staphylococcus being especially frequent.

In 1886, Bumm reported eight cases of puerperal cystitis in which he found a micrococcus common to all, which microbe, according to Hallé, was probably the staphylococcus aureus. Clado, in 1887, isolated from pathologic urine a bacillus which he described as a septic form of bacteria of the bladder. He experimented on animals with this bacillus and produced cystitis by its introduction into the bladder. Injection of the same micro-organism into the peritoneum resulted in the death of the animal. In three cases of urinary fever this author found in two living patients the same bacillus in blood drawn from the liver, and in one autopsy he found the same organism in the blood. Other authors have isolated from pathologic urine micro-organisms which, injected into

animals, produced nephritis. Hallé, who wrote a most comprehensive article on urinary infection, reported some interesting early observations. In 1887, this author published a very interesting case on which he formulated his theory of urinary infection.⁵ The patient was affected by impermeable stricture with an intense cystitis, and presented, following each attempt at forcible catheterism, violent febrile complications, which finally resulted in death. The purulent urine collected and cultivated during life furnished in pure culture a non-liquefying bacterium. At the autopsy this same bacterium was found in the renal pelvis, the parenchyma of the kidney, in miliary renal abscesses and also in the general blood circulation and the liver. This bacterium was subsequently shown to be that isolated by Clado. In 1888, Albarran and Hallé published an elaborate bacteriologic study of a case of urinary infection with experiments on animals.⁶ They found this bacterium in forty-seven out of fifty examinations of pathologic urine. In thirty-five urines, studied by cultures, fifteen contained this bacterium in pure culture. In twenty other cases it was associated with other micro-organisms. In eighteen out of nineteen autopsies made immediately after death, the pelvis of the kidney contained this bacterium. It was also found unassociated with other bacteria in the pus of a case of pyonephrosis removed by incision. It was found in three cases of periurethral urinary abscess, and in fourteen cases of infectious nephritis. In two cases of acute febrile infection an early autopsy showed this organism in the blood, the liver and the spleen in pure culture. In six cases of fatal urinary fever of slow development, culture of the blood in the large vessels made in four cases immediately after death yielded a pure culture of this bacterium. With this organism the authors produced cystitis in the animal by injection into the bladder after ligature of the penis, a fatal general infection by inoculation in the serous cavities, localized suppuration by inoculation of the cellular tissue, and suppurative pyelonephritis with renal abscess by injection into the ureter after ligature. It would be supererogation to present all of the conclusive experiments by these authors. The marked pyogenic properties of the microbe discovered by Albarran and Hallé are interesting.

In 1890, Krögius discovered a peculiar microbe in purulent ammoniacal urine.⁷ In ten specimens of urine, he isolated in three instances a micro-organism quite different than that described by Albarran and Hallé, its formation, size and colorizing properties. The inoculation of this bacillus in the cellular tissue, veins, and peritoneum of the rabbit, speedily killed the animal in some instances; in others at a later period. At the point of inoculation the bacillus produced edema and cellular tissue gangrene, but no suppuration. Sterilized cultures were inactive. Krögius termed the micro-organism the *uro-bacillus liquefaciens septicus*. His observations have since been verified by others.

5. Hallé: Bulletin de la Société anatomique, October, 1887.

6. Albarran and Hallé: Note sur une bacterie pyogène et sur son rôle dans l'infection urinaire, Academy of Medicine, Aug. 21, 1888.

7. Krögius: Societe de Biologie, July 23, 1890.

As illustrative of the many types of germs that have been found in pathologic urine, Rovsing's studies of urines taken from twenty-nine cases of cystitis were interesting. They comprised twelve species of microbes, with some of the varieties of which we are already familiar, such as the bacillus tuberculosis, staphylococcus albus, citreus and aureus, and new varieties to which he applied the names of streptococcus ureae pyogenes, cocco-bacillus ureae pyogenes, diplococcus ureae pyogenes, micrococcus ureae pyogenes flavus, and four other varieties, which, as Hallé remarks, are nothing but the four preceding varieties deprived of their pathogenic properties. Experiments on animals showed the pathogenic properties of these various microbes.⁸ The point of greatest interest is that some of the earlier investigations proved certain pyogenic microbes found in the genito-urinary tract to be practically identical with the bacterium coli commune. Krögius, in seventeen pathologic vesical urines, found an organism which he identified as the bacterium coli commune in twelve cases. In eleven cases this bacillus was found in pure culture. He afterwards found this organism in secondary suppurative processes of the kidney, and in the splenic parenchyma. Its pyogenic properties were proven by animal experimentation.

The important etiologic relation of the bacterium coli commune to urinary infections is now generally accepted. It is not so many years, however, since my own views of the transpelvic and transabdominal migration of this micro-organism to the kidney, ureter and bladder were flouted. I held that the colon bacillus became changed into a pus-producing organism by evolutionary changes, and also asserted my belief that the same organism was by evolution the parent of the bacillus typhosus. For teaching purposes I express the situation thusly: "When is a colon bacillus not a colon bacillus?" Answer: "When it is in some location in the body other than the colon."*

How gratifying it is to know that our knowledge of the germ pathology of the urinary organs is now so far advanced that we often can isolate the germ and cure the condition by inoculating either auto or stock vaccines of a few millions of the dead organisms. This subject alone would require a lengthy special paper.

The relation of the bacillus tuberculosis to urinary infection is too familiar, and the field too large for presentation here. Those present who care to discuss it are, of course, privileged to do so. I would merely, in passing, call attention to the frequency with which the tuberculosis bacillus is found in non-pathologic urines.

Of interest regarding the relation of bacterial infection to genito-urinary disease is descending infection of the kidney, ureter and bladder. It has been shown that micro-organisms may primarily infect the glandular structure of the kidney, and that subsequently either these germs or their products may infect the pelvis of the kidney, and descending, produce infection of the more external portions of the genito-urinary

8. T. Rovsing: Berlin, 1890.

* If a germ is to be classified according to its pathogenicity, why not change our nomenclature of the colon bacillus when we find it in abnormal locations?

tract; that is to say, a cystitis may result from a primary septic, tubercular or colon bacillus nephritis acquired by infection via the general circulation. Certain circulatory disturbances afford an invitation for germ infection. Heubner temporarily ligated the vesical arteries; he then released the vessels and observed that the influx of blood was followed by coagulation necrosis and thickening of the bladder walls. He then found that if coincidentally with the removal of the constriction of the circulation pathogenic organisms were injected into the blood, septic cystitis and gangrene of the vesical mucosa resulted. Guyon performed similar experiments on the kidneys with like result, both as regards the effect of the circulatory disturbance and the *locus minoris resistentiae* thus afforded to pathogenic organisms subsequently entering the kidney.

That the gonococcus is an important factor in genito-urinary infection has been proved beyond dispute. That it is so important a factor as Neisser, Bumm and others at first asserted, is open to question — at least in this respect, that if it be claimed that without the gonococcus there is no infection of the male urethral mucous membrane, or of the mucous membranes of the female genitalia, too much is claimed for that micro-organism and too little respect is shown for other micro-organisms which may normally exist in or enter the female genital tract, and under certain circumstances assume pathogenic properties. For nearly twenty-five years it has been my publicly expressed belief that, through evolutionary changes, what may be termed the normal micro-organisms of the female generative apparatus may undergo transformations, and assume new and pathogenic properties capable of exciting not only urethral inflammation in the male, but under favorable circumstances — such as is afforded by the traumatism incidental to parturition — may possibly infect the female herself. There is one point which has, I presume, puzzled others as well as myself. Feeling confident that gonorrhea and its congeners have their origin in filthy and unhealthful states of the female genitalia, I am at a loss to account for the genesis of the gonococcus. Is there any organism in the female genital apparatus which may undergo transformation and assume the properties which we know to be peculiar to the gonococcus? Or is the starting-point really in the genital apparatus of the male, the female genitalia acting merely as the culture-bed for the production of this special germ? There is something very striking in the close similarity of the gonococcus and the normal urethral coccus. The question has sometimes arisen in my mind whether the gonococcus is not really a derivative of the urethral coccus; in other words, whether the differences which exist between the urethral coccus and the gonococcus — such differences as variations in their properties of coloration, affinity for pus cells, and peculiarity of grouping — might not be accounted for by evolutionary changes in the urethral coccus itself. The special properties of the gonococcus would, it seems to me, be no argument against this possibility, for with evolutionary changes of form and an adaptation to its new environment — i. e., a suppurative inflammation of the urethra — it is not illogical to assume that the acquirement of new and apparently specific properties might result.

Regarding the evolutionary theory of the origin of the local venereal diseases, there is one fact which seems to me to be of paramount importance, viz., if we accept the theory of evolution as applying to the higher types of animal and vegetable life, we must necessarily accept it as applying to germ life, the difference being, it seems to me, that while in the case of the animal and vegetable types, as we see them at the present day, differentiation has arrived approximately to developmental perfection, differentiation and adaptation to environment are going on in a most marked degree in the case of the lower forms of life, to such a degree that a marked variation in toxic properties, if not in physical form, is naturally to be expected. One thing is certain, if we accept the laws of evolution as applying to the host — i. e., the animal affected — we must, *volens volens*, accept it as applying to the parasite — i. e., the microbe. We certainly produce evolutionary changes in the germ — at least so far as its vital properties are concerned — in an artificial environment of our own creation in the laboratory, and it seems to me that if it were not for the natural law of evolution governing micro-organisms, which law prevails much more powerfully in its natural habitat than in our culture tubes, we would have absolutely no experimental control over such organisms. The only alternative of this theory is the view of a special creation of perfectly developed and unvaryingly typical forms. This, I believe, is incompatible with the present status of biology. A point of considerable importance bearing on the multiplicity of forms discovered in various infectious genito-urinary processes by different observers, and bearing more particularly on the close similarity of several forms of microbe thus discovered, is the fact that the physical properties of a germ is not an accurate criterion of its special qualities of infectiousness. Germs of alleged pathogenic properties of a precisely similar character have been found in several very dissimilar pathologic processes, suggesting that a metamorphosis of the germ may occur, by virtue of which it acquires a variation of properties of infectiousness without necessarily undergoing any change in physical conformation. Even in cases of urethritis which are distinctly gonococcal in origin, or, rather, if you please, in which gonococci are present in great numbers, we stand face to face with a mixed infection. In chronic cases of indisputably gonorrheal origin we often find the colon bacillus as the dominant, or even the sole, organism. The periurethral phlegmons and abscesses, the lymphangitis, the prostatic suppurations, the acute cystitis and acute inflammation of the kidney, and in women the peritonitis, which occur in the course of gonorrhea, are often due, not to infection with the gonococcus *per se*, but to other germs or germ products which are associated with it. Gonococci, even in typical gonorrhea, do not long exist independently of the common pyogenic microbes. In the joint, muscle, tendon and other serious complications of gonorrhea, gonorrhea toxins, other germs than gonococci, or the products of other germs, are often responsible for the condition. Few infections are more typically mixed than gonorrhea eventually becomes.

I might say in this connection that pus from periurethral abscesses following gonorrhea has been inoculated on the urethral mucous mem-

brane with a negative result. Ehrmann of Vienna has introduced pus from an unopened periurethral abscess into a blind sac of a mucous membrane in a healthy hypospadiac without effect. The introduction of the same pus into the urethra of the same individual caused only a slight follicular inflammation that disappeared in a few days.

I have noted cases of primarily specific bartholinitis which produced non-gonococcal urethritis in the male.

If infrequency of a specific gonorrheal cystitis be established, it certainly will greatly modify the existing views regarding this much-dreaded complication of gonorrhea. Even prior to the discovery of the gonococcus it was supposed that the gonorrheal cystitis was due to the specific poison of the gonorrheal process. Since the discovery of the gonococcus it has been by many supposed that the gonococcus was always the exciting cause of a complicating cystitis. Dumesnil,⁹ however, denied that specific gonorrheal cystitis ever occurred. He claimed that when gonococci were found in the urine, they were accidental ingrafts on the infectious process, having entered the bladder along with the purulent products of the urethral inflammation, and not new products developed from true specific inflammation of the vesical mucosa.

It is conceivable that, especially in women, urethral or vaginal pus may get into the bladder in this manner; although, as a matter of fact, true gonorrheal — i. e., gonococcal — cystitis probably is relatively quite rare in women. Dumesnil claimed to have shown that gonococci produced no alteration in the composition of urine, cystitis with ammoniacal urine never being produced by these germs. He claimed, moreover, that the vesical urine either renders the gonococci harmless, or kills them completely.

The members of this society will readily understand that it is impossible for me to discuss this particular phase of genito-urinary infection exhaustively in this paper; it alone would be sufficient for an entire paper of considerable length. I even hesitated to touch on it, fearing that I might involve myself in a misunderstanding of my views through inadequate presentation, much as I desire to hear expressions of opinion and a free discussion of the subject from the eminent gentlemen who have honored me by their attention.

PERSONAL CLEANLINESS AS A FACTOR IN PUBLIC HEALTH *

ADOLPH GEHRMANN, M.D.
CHICAGO

Recently there has been discussion among sanitarians as to the further direction that activities against communicable diseases should take. There is a recognized efficiency in public health work depending largely upon the money interest that the public is willing to put into it:

9. Virchow's Archiv, Vol. cxxvi, 1891.

* Read before the Chicago Medical Society, Dec. 11, 1912.

while from the scientific side there is a clear understanding as to the principles that will improve the public health. The usual difficulty is that other public improvements come first and are considered more important or the disease conditions in a community are not violent enough to make an impression on the public itself or upon its representatives. In the light of newer findings and interpretations the infected person is the menace to public health. He is the responsible one and it is the sanitarians' work to find him out and keep him under control until no longer dangerous. This is the problem proposed for the newer activity for better health protection. The opposing question arises, Is the public ready for such rigid quarantine? Is our education such that the sick person is willing to accept himself as being dangerous to others? However, under the best guidance the campaign for public health reaches a certain stage of efficiency where it appears to remain stationary or at least we do not see the fulfillment of our ideals.

The discussions among state and municipal health officers have turned about the relations of masses of population toward the infecting organisms in epidemic diseases. Is it possible to remove these causes of disease entirely and no longer to be plagued with them or shall we modify our resistance so that we will have no particular fear from contact? Epidemic diseases reappear after a time even when apparent safety from them has been secured. The cause is, therefore, not gone but has not been present in a given locality or has not been in a sufficiently active state to induce infection. It has been noticed that the severity of epidemics is modified from what it was years ago in that the cases are not as typical nor the outcome as dangerous as formerly. Much of this has been attributed to a better maintenance of health. I do not believe that this conforms to our understanding of immunity. There is no experiment in which the absence of the parasite increases the margin of safety for the host. My own view is that, at least in regard to some forms of infectious disease, the real cause is not in an improved health of the population, but because the exciting cause does not pass as easily from person to person owing to earlier diagnosis and better treatment as applied to-day. This would correspond to the results of animal experimentation in which it is seen how the virulence of a parasite increases as it is more rapidly passed from animal to animal. This change is facilitated by having at hand an abundance of normal perfectly healthy animals by which to propagate the disease. On the other hand we must recognize that the absence of communicable disease allows a community to vegetate although its general immunity may be steadily decreasing. An epidemic may then be more disastrous if it is allowed to progress. Such limitations and possibilities in general health administration are giving sanitarians reason for search for solutions other than those now available. The past sixty years has shown us that the causes of infections are real and also how these organisms may pass from person to person. It has further taught how this transmission may be stopped. Yet with this knowledge the recognizedly purely preventable diseases still remain with us and the death rate rises and falls for large groups of population from reasons now beyond control.

Communicable diseases can be suppressed first by some general system for removing the cause; second, by general immunization of a population against the cause; and, third, by systematically avoiding contact with the causal micro-organisms. The first method must be devised and maintained by the body politic. Individuals are passive. The second must be by a combined activity of scientific authority and the individuals. The third rests with the individuals. To remove the cause by some great public work or system of administration is the highest type of preventive medicine. Many of the requirements for this type of protection are well understood, but the public fails in electing or appointing qualified representatives who will take the lead in establishing these systems for the public good. The final achievement falls short. As an example, Chicago has paid millions to keep its drinking water clean and yet almost every hour a dump scow filled with refuse is emptied just where we wish to avoid contamination. As far as general immunization is concerned this method only becomes popular in time of need, at other times it is neglected. It is further limited, with the exception of the eruptive fevers, by the short duration period of the protective immunity that is induced. The subtle spread of infecting micro-organisms has been much discussed, but the average American citizen at once takes the position that he will chance not being hit. This view is only the reflex of our entire system of living in which a close observer will see chance and bluff guiding the individual more often than a desire to conform to rules or principles. To avoid the cause is distinctly a part of preventive medicine. It is this subject that we as physicians will be obliged to study more carefully as a means of advancing the campaign for public health. For purposes of clearness and convenience it may be called "personal cleanliness."

In its relation to public health personal cleanliness has two sides. The first is a recognition on the part of individuals that their own excrement of whatever kind must be disposed of in a safe manner and, second, the ability to avoid and protect themselves from this kind of misdemeanor in others. Is it possible to develop personal cleanliness that it may influence general health? As physicians we learn the scientific facts. We see the possibilities first and we can appreciate the results. We have shown the way in protecting health from intestinal infection by clean food and drink. The proposition of prevention by personal cleanliness is before us and demands attention in the fight against communicable disease. From the standpoint of what the physician knows the public is far from being clean in its simplest acts. The subject may be considered from several sides. What is the present status of the public and the transmission of micro-organisms? Is it possible for the public to attain to an action that will be effective? In what ways shall physicians proceed to get results? What shall be presented and what arguments offered?

Immediate results cannot be expected. I would consider it necessary to conduct a systematic campaign of education through three generations to change our present habits. The citizen has a vague notion concern-

ing bacteria, but he is far from a working basis for his own or his family's protection. We may take as an example the attitude of our medical students when they come into the bacteriologic laboratory. These young people represent an average intelligent citizenship; yet it takes about two months' application for the majority of them to appreciate bacteriologic cleanliness and that bacteria can be picked up and carried the same as any object. They see dissemination by contact and learn of its many subtle variations, appreciating from this how infectious disease may spread. The intermediate spread of disease cannot be observed by the public. The spread of such diseases as typhoid, cholera, malaria, and yellow fever, is to be prevented by the activity of an efficient health authority. In this there is the definite prevention of contamination of food and drink, and the suppression or protection from infection of well recognized carriers or intermediate host animals by some generally conducted protective measure.

What should personally interest the members of a community is the more or less direct transmission of disease from person to person and its prevention. People in general do not consider the secretions of the mouth and nose, scrapings from the surface of the body and mucus discharge as excrement; these are not treated as such, and are disposed of without thought. In great cities everything about as high as we can reach is smeared with sputum. Not one person in thousands would think of going to a toilet to spit. We can put our finger on two possibilities relating to our people in public; first, filthy habits and second the crowd. Personal cleanliness has its bearing on these with variations and extensions. Each person can develop himself in cleanliness first as related to himself and second as a protective ability against possible infection from others. Our education and training should make us a clean people, while for the second a willingness to obey health regulations and enough knowledge to see the danger signals of disease is to be developed. Often someone asks if the water has been boiled while at the same time the waiter wipes his nose and puts his finger in the glass. The father comes into a street car with his child and gets a transfer licked by the conductor and sits down and gives the transfer to his child who immediately puts it into its mouth. They wonder how the child got an infection of the throat. The crowd is also responsible for much dissemination, with all its accompaniments of vitiated air, dust, hand shaking, deep breathing in speaking and laughing; these pass the microbes from person to person.

The subject of the single contact and infection is interesting. We as physicians often see one exposure by contact transferring bacteria. We now cover our faces while making examinations. Continuous contact may be worse, but it is not necessary for infection. The bacillus carrier can infect a number of people about him in a few minutes. The physicians must lead the way. The fact of excrement and its proper disposal are the key notes to progress. Contact is a relative term. The workers in a laboratory are reasonably safe although specimens and cultures are handled daily. The relation of bacteria to disease is to be sufficiently

understood that it may be a basis for daily conduct. The bacillus carrier and coccus carrier are the sources of infection. A certain number of these can be found and more or less controlled, but the net result must be minimal.

Our present method of proceeding is defective in that it does not involve a general enough principle. We are dealing with details. We are attacking the problem from the top. We are interesting those in trouble. We are trying to recover our balance after being struck. The place to inaugurate this campaign is in the schools. Children will see the point quicker than older persons and the impressions gained will be more lasting. It is necessary that a general sentiment be created. When this is established as a part of education it will react into the home and into all lines of vocation. It is my opinion that the bare lecture is only of passing value; there is need for obvious demonstration. Some of the simpler facts of bacteriology can be shown to the smaller children. The first principle to be presented is that the mouth is to receive food only. The child naturally puts everything into its mouth. This is a fundamental law of life, to apprehend to see if it will nourish. This quickly becomes a habit, to the ultimate that the fingers are chewed for want of other objects.

The second education principle is that the mouth and nose always contain bacteria. That sputum is excrement, that it must be disposed of as such. Here the campaign takes up the abolition of licking and biting objects to facilitate action. Next the recognition that the mucous surfaces of the body are poorly protected against bacterial invasion. These surfaces are partial wounds. They are moist, everything sticks to them; they are irregular, firm lodgment of dust particles is easy; they are more or less covered with mucus that may remain in place for some time, giving a bacterium time to multiply and attack the more healthy deeper cells. Most diseases start from these small beginnings. The next principle is that of avoiding sources of infection. The elaboration of this principle may be carried into many circumstances of living. Here may be presented the value of avoiding close contact with the suspicious. Backing out when the crowd gets too thick. Getting to windward of the sneezer or shaker of his handkerchief. Washing the hands after an unavoidable contact. These precepts can be carried into venereal prophylaxis, I believe, with a much better chance of success than the ordinary talks on sex hygiene. These to my mind are more often sexual stimulents than real instruction in prevention. Every people has its own peculiar social practices; some are bad in one way, some in another, while some are good.

As we know that disease may be spread by some general habit in society it should be incumbent to change that habit. We have done it in the crusade against the common drinking cup and towel. We should take up other factors, as dirty money and similar objects that are transferred from person to person. Tickets and papers of all kinds are not to be licked when handled. The antispitting crusade has been a failure because to forbid spitting and at the same time have no provision for

sputum disposal is unnatural. The young man in the street car looks at the sign and says, "Spit, Bill, it only costs a dollar." It has taken three generations of surgeons to cover the mouths of those in operating rooms. It will require at least the education of three generations to impress the public that sputum is excrement. We must agitate for this change now.

The campaign of publicity has brought a number of improved conditions. The result is incomplete when we see a gang of workmen drinking from the same water bucket or the promiscuous use of the counter cigar cutter in every cigar store. The licking of papers, tickets, money and wrapping paper is so general a habit that it is the exception to find a person who avoids it for sanitary reasons. The antisputting crusade has only impressed a few thinking people. Every day you can see persons of apparent intelligence breaking every rule offered in this campaign. This is true even among physicians who should conduct themselves as examples to others. My observations lead me to consider that the only persons who properly control the sputum are those who have had to do with some form of institutional treatment. It is useless to proscribe spitting in one place and have the worst violation a step or two away. Spitting on the sidewalk is a misdemeanor while inside at every elevator door is a eupidior to invite splashing down the elevator shaft or when the sputum has dried to draw it by suction into the elevator car. The cleaning of cuspidors can be classed as a dangerous trade, yet it is done in the most shamefully unsanitary manner. The spitting nuisance and the blowing of the nose with the finger and free sneezing are bad practices of such universality that their suppression will be impossible unless some general change comes into our natures. We don't want this excrement. Why should we bother ourselves about it.

The other bad habit of the public is the crowd. Contact breeds disease and the crowd in whatever way or place may be the start for a more or less epidemic condition. The crowd is controlled by ordinance in a limited way; mainly with the view of protecting life from collapse of buildings, overloading of boats and again in case of fire or panic. Ordinarily the sanitary condition is secondary. In school room sanitation the number of pupils is considered from this standpoint, but the children make a crowd of themselves at every opportunity while at play. In the main the crowd cannot be prevented or continuously managed. I would not expect safety in preventing the crowd, but it is the action of people in the crowd no matter how large or how small. A person who understands personal cleanliness is safe to meet in any place. I believe that general principles of prevention that are reasonable may be introduced and developed for the health preservation of a community. The single sporadic effort against the communicable diseases is not sufficient. It is necessary to combat these diseases in a wholesale way. Personal cleanliness presents principles of conduct that can modify disease transmission provided we can induce a general public recognition of their value. I believe this can be brought about by joining it with our educational system as a continuous force leading to improvement in our associations in public and in private.

DELAYED DEVELOPMENT OF SPEECH IN YOUNG
CHILDREN *ELMER L. KENYON, A.B., M.D.
CHICAGO

Speech may be developed normally at the usual period for speech development, or it may be developed imperfectly, or it may not be developed at all. The evil effects of an imperfect speech are of minor importance as compared with the evil effects of developing no speech at all. For imperfect speech, even if it be a disadvantage in social intercourse, still retains much of the value of normal speech as a "tool" for use in the development of the mind. The utility of speech consists not alone in being an instrument of social intercourse, but, also, and more fundamentally, serves as an essential aid to mental development. The mind which has never experienced the aid of speech in its development is a relatively primitive mind lacking in the usual more complex capabilities of thought. When speech has been developed at the usual period, the mental development goes on normally. When, however, speech is greatly delayed in developing, the development of the mind is seriously interfered with. Thus one realizes the great harm which may come from prolonged retardation of the development of speech in the young child. To dwell on the seriousness of permanent speechlessness is unnecessary.

For the sake of clearness in understanding so complex a subject, and at the risk of discussing matters which may already be understood. I propose in the beginning to speak as briefly as possible of the physiology of speech development. This will be done, first, from the standpoint of the objective phenomena as observed in the developing speech of the child, and, second, from the standpoint of the physical and psychologic phenomena of speech.

Observing the developing child one divides his speech efforts into a crying period, a lalling or babbling period, an imitation period, and finally a period of spontaneous speech.

As the primitive but awakening mind of the infant seeks to express itself, muscular effort of some sort becomes its instinctive method. The first use of the voice is coincident with the use of the arms and legs and facial muscles in movement. Crying is at first but a reflex muscular act. Later, however, coincident with the development of the gesture significance of movement, it comes to signify pain, resistance, desire and the like.

In the second or lalling period the child utters simple syllables, usually as an expression of pleasure, like "da da da," "Ma Ma Ma," etc. Even in the earlier crying movements every organ connected with the peripheral speech apparatus, chest, larynx, tongue, palate and lips spring into action as by instinct. Pleasure is found not only in the movements

* Read, by invitation, before the Chicago Pediatric Society, March 18, 1913.

for producing sounds, but also a pride as well as pleasure in listening to his own voice produced by his own efforts.

Thus, towards the end of the first year when the mind has so far advanced as to be ready for the next important period in the development of speech, that of imitation, the peripheral speech organs are already capable of responding, crudely to be sure, but with the beginnings of exactness, to the further demands of speech.

The ushering in of the period of imitation marks a crucial period in the developing mental life of the child. It expresses the first evidence of the mental association of the heard sound with the idea of its reproduction. The mind has been active; the senses of sight, feeling, hearing, taste and smell have all the time been impressing their observations on the unformed plastic child mind, and have themselves been becoming keener. The capability of fixing the attention on a particular object has been improving and memory has been operating. Spoken words have been heard and to a certain extent have been retained in the memory; meanings have been attached to some of them; and the mind generally has felt an impetus to go on and fill itself with new impressions.

Now comes a higher form of vocal pleasure, the performance of something more definite and controlled with the vocal organs. It marks a step in the growing effort of the mind to find itself. At the very start imitation probably is merely a reflex act and unassociated with the child's conscious significance of the meaning of the word. The incoming acoustic sensory impression excites directly the motor mechanism of speech, without the intervention of the ideational processes of the mind. But very soon the conscious child mind begins to gain pleasure in this new higher form of self accomplishment and directs it to harder and more exact effort, and still later the mind comes gradually to strive for conscious definite attainment of the desired sound. The peripheral speech organs gain by practice a greater and greater facility.

The child now can consciously, even though crudely, imitate words that have been heard, and to which a simple meaning is becoming attached. And also the child's memory for spoken words is no longer empty. He is, as it were, primed and cannot long be restrained from making the next great and last try at speech production, that of spontaneous speech. He now begins not only to imitate words at the time they are spoken, but, out of his own storehouse of word memories and with the employment of his now awakening capability of thought, for the first time uses words to express innate ideas. He has now become a speaking person. At first he employs single words, chiefly nouns, aided by a significant gesture, to express a whole idea. But by a quite definite further advance in his mental and speech capabilities he next progresses to the use of simple sentences. Then through the succeeding months, the further complexities of grammar and syntax are bit by bit worked out. All this time the words, which in larger and larger numbers are being treasured in the memory, are each taking on enlarged and more exact meanings, as the various senses continue their activities and the child gains more experience in the world. The thought is becoming

more elaborate. The peripheral speech organs under the influence of endless repetitions are becoming more and more skilled, and the sound produced more and more exact. The child has at last acquired the full capability of speech.

The normal development of speech requires the existence and at any rate the relative normality of the following functions:

1. A peripheral apparatus, the ear, to receive the air waves which are here transformed into nervous impulses and despatched along nervous tracts to the brain.

2. A sensory spoken word center¹ to receive from the ear the transmitted word impulses, and to analyze them.

3. A spoken word memory function closely allied with the sensory spoken word center through which spoken words may be stored up for instant use.

4. Centers for the perceptive activities of the various senses, through the action of which the spoken words stored in the memory are caused to take on their various characteristics.

5. An area for the development of the more complex language functions of grammar and syntax. This may be considered as essentially involved in

6. General ideational activities of the mind, through which understanding and thought take place.

7. A "coordination," or "motor," or "kinesthetic" center to direct the complex movements of the peripheral speech apparatus.

8. The peripheral speech apparatus just mentioned to translate the mental commands into the physically spoken word.

With the last mentioned mechanism, the air of the lungs is expelled outward by the compressive action of the chest muscles through the bronchi, the trachea, larynx, pharynx, mouth and nose. On its way out, the air meets with a complicated, definite and ever changing system of interferences. Each form of interference represents a definite "elemental" sound, and through their endless combinations an endless number of words may be produced. These elemental positions must be exact, always identically reproduced, and pass from one to the other with the utmost ease and precision. This demands a most complex and nicely adjusted coordination of the chest, laryngeal and mouth mechanism of speech. While individual elemental positions are controlled by motor cells below the cortex, the translation of the mental impulse of the spoken word into the required peripheral movements for its reproduction is the function of the motor spoken word center. It holds in memory a mental conception of the complicated commands required to cause the peripheral speech organs to reproduce a particular combination of elemental positions, and sets such commands into action as required.

1. The word "center," which I shall use frequently, has in this paper no more than a vague anatomic localizing cerebral significance, but is used psychologically. A particular psychologic function as, for example, that which memorizes the spoken word, is undoubtedly carried on by the mind, and it is that function regardless of the location in the brain of its performance which I wish conveyed by the employment of the term "center for spoken word memories." And yet corresponding anatomic centers, while their boundaries may not be exact, do exist. The terms "center" and "function" and "area" in this connection will be used interchangeably.

9. All of these various centers of the mental speech mechanism must be connected by nerve tracts.

Imitation may be produced by the passage of the impression of the spoken word received in the sensory spoken word center directly to the motor spoken word center without passing through any ideation process. But the association between all of the various centers mentioned is so very intimate as to form in actual use one mechanism.

In its adult manifestations, speech rests on a richly stored sensory spoken word center, requiring years for its development (now also enhanced by a written word center) on a motor spoken word center having potential word combinations of every sort; on a peripheral speech apparatus extremely skilled for spoken sounds, and on a mind experienced and capable in general speech and thought elaboration.

When the infant is about to enter on the development of speech, his sensory spoken word center, his memory for spoken words and his motor spoken word center are as yet undeveloped. He has first of all to begin the building of his sensory spoken word center. This is very early entered on through the constant hearing of spoken words and has progressed considerably before a word has been uttered. Not until the sensory spoken word center has become quite well developed and the word memory has become quite well stored does imitation set in. Then through endless efforts at imitation the motor spoken word center is built up coincident with the development of skill in the peripheral speech apparatus. While all this is going on the various senses are building more elaborate meanings into each word stored in the spoken word memory, and the ideational processes are becoming more elaborate.

For the normal development of speech, then, the following organs and centers must be capable of normal physiologic action: the external ear, the sensory spoken word center, the spoken word memory, the motor spoken word center and the peripheral speech apparatus; normally acting nerve tracts must exist between them, and the general mental capabilities must not be subnormal to a too great degree.

Approaching now the clinical aspect of the subject in hand one has to note a considerable variation in the time for the beginning of speech, even normally, ranging from the end of the first year of life toward the end of the third year. Speech may start at any time within this period and proceed to natural development. While it usually begins at about the beginning of the second year of life, and one might on theoretical grounds desire a relatively early start for speech, yet clinically one would find it hard to discern in the long run a real disadvantage for those normal children whose speech fails to awaken before the beginning or even middle of the third year of life. The early development of speech within this normal period does not, then, signify an advantage in intellectual brightness over those children whose speech begins later. Probably especially significant is the child's aptitude for movement in general. Speech is a motor function. Children, even infants, vary in their natural aptitude for movement, for grasping, walking and the like. Lateness in the development of speech is often coexistent with lateness

in the development of walking. Girls begin to talk appreciably earlier than boys. A child who has normal sight begins to talk before a blind child, the sight of the moving lips apparently inciting to earlier speech. This suggests that an increased natural aptitude in observation would encourage an earlier beginning of speech. Much probably depends on environmental conditions, the suggestiveness with regard to speech of the mother's attitude toward the child, the clearness of examples of speech, etc. Difference in the inborn energy of the child, if we may judge from such evident differences in later life, might be expected to help to determine the beginnings of speech. And one should not fail to mention the possible effects of malnutrition due to disease or poverty, or difficulties of diet, because of their possible effect on the physiology of the brain cells. But, at any rate, a perfectly natural range of time exists for the ripening of the conditions on which the awakening of spontaneous speech depends. Those children whose speech is late developed within this normal period, we classify under the name *physiologic mutism*.

However, if the speech be delayed into the third year one is led to wonder whether conditions abnormal in nature may not be present threatening a prolongation of speechlessness beyond the normal period. If such be the case the mutism may continue into the fourth, fifth, sixth or seventh years, or even, rarely, as Gutzman reports, the fifteenth year, and still speech be developed, or the child may remain always dumb. When the period of speechlessness has extended into the third year of life, it is time to begin to consider whether the child may not require especial consideration.

Classification.—The following classification of mutism in young children is based on that of Hugo Stern, but considerable changes have been made:

1. Deaf mutism; surdo-mutitas.
2. Idiotic mutism; mutitas idiotica. (All cases of feeble-mindedness with permanent mutism.)
3. Physiologic mutism: mutitas physiologica. (Speech late in starting, but begins spontaneously before the end of the third year, and usually goes on to complete normal development.)
4. Hearing mutism; mutitas prolongata. (Development of speech delayed beyond the third year, but both hearing and intellect admit of the development of speech either spontaneously, or, at any rate, under treatment.)
 - a. Otitic. (Hearing not quite sufficient for easy appreciation of conversation, but not absent.)
 - b. Sensory. (Physiologic impairment centered in the mental perceiving apparatus.)
 - c. Physical motor. (Peripheral speech apparatus impaired.)
 - d. Mental motor. (Physiologic impairment centered in the mental motor spoken word function — Broca's center.)
 - e. Feeble-minded, but capable of developing at least an imperfect speech.

f. Mentally backward, but not feeble-minded (attention, concentration, memory, or other mental functions more or less dulled).

g. Combined causes. (Two or more of the above causes acting together.)

h. "Pure" hearing mutism. *Mutitas physiologica prolongata* of Hugo Stern. (None of the above causative factors appearing to be acting, but the speech delayed beyond the third year.)

Etiology.—The most common and most familiar explanation of prolonged speechlessness is deaf mutism. Congenital deafness and infantile acquired deafness from middle-ear and from labyrinthine infection and from traumatism is not extremely uncommon. The deafness is in these cases clear explanation of the speechlessness. Since the ear is incompetent to transform the sound waves into mental impressions, the sensory spoken word center cannot be developed and thus no conception of the spoken word can enter the mind.

The subject of idiotic mutism calls for a brief statement concerning the relationship between speech and the mental processes in general. Speech is in itself a highly specialized cerebral function. Its processes are everywhere interwoven into the general mental activities. Consequently, impairment of the mind as a whole would seem inevitably to imply impairment of the speech. The condition of the speech would, if this were universally true, become a universal means of measuring the condition of the mind. On the other hand, however, the mental speech mechanism undoubtedly has an existence in a large measure distinct from the ideational processes of the mind. It is deeply interwoven, but not lost in the general mentality. The proof of this statement lies in the very clinical fact that I wish to emphasize, namely, that the speech of a person whose mind in general is subnormal, and even decidedly subnormal, may be essentially perfect and even unusually fluent. And, conversely, speech may be greatly impaired in persons whose general mentality is normal. The condition of the speech, then, may be a measure of the general intellectuality, but the exceptions to the accuracy of such a measure are many.

A certain degree of mentality is required for the development of speech. Idiots below a certain grade are all speechless. Above this grade speech develops imperfectly and grows more perfect as one advances upward through the imbecilic and the still lesser degrees of mental impairment in the feeble-minded. But all through this ascending scale occur exceptions to the regular order of the relationship between the mind and the speech. Permanent mutism exists much more often in the feeble-minded than in the normal-minded. Also the beginnings of speech, even where it does develop, are more likely to be delayed in the feeble-minded. Thus, if speech is late in developing, the possibility of feeble-mindedness necessarily projects itself into the etiologic inquiry. If the mental impairment be of a marked degree one may be able to quickly set the case aside as quite incapable of developing speech. If the mental impairment be moderate the possibility of developing speech may be accepted tentatively and the child handled until the speech prog-

nosis can be more definitely understood, much like the normally-brained speechless child.

After eliminating the cases of deaf-mutism and the cases of permanent mutism from feeble-mindedness, we have remaining the children who hear and are capable eventually of developing speech, and yet who have failed to talk before the end of the third year of life. These may be classed broadly as cases of hearing mutism, in contrast to deaf-mutism.

INJURIOUS CONSEQUENCES OF DELAY IN SPEECH DEVELOPMENT

In deaf-mutism the development of speech is out of the question without especial training through the aid of the other senses, but in hearing mutism a tendency to the spontaneous development of speech is still present and speech may set in in the fourth, fifth, sixth, seventh or even later years of life. Then, if these children develop speech spontaneously, even if it be late, why, it may be asked, trouble about their early speechlessness? In the first place not all of them develop speech spontaneously, and in the second place probably none of them unaided develop speech perfectly, and in the third place the effect of delay in the development of speech may be exceedingly injurious to the child's general intellectual development.

One recognizes a "speech development period" in which the mental energies of the child seem to concentrate themselves on speech development. The capability of imitation is at its best. The sensory spoken word center is, as it were, perfectly plastic for receiving the impressions of the spoken sound and retains them with exactness, and the expressive function, both on the mental and the physical side, is capable of developing a perfect method of producing the heard sounds. Later, however, roughly after the fourth or fifth year, this readiness of the mind for speech diminishes. Therefore, if speech be developed after the third year, the sensory spoken word center is likely to be built up with crudely perceived impressions of the elemental sounds, of the syllable, and of the word, and the resulting development of the motor speech system is correspondingly imperfect. The speech shows inaccuracies in the elemental sound and in the syllable and substitutions of one elemental sound for another, the development of syntax may be imperfect, the whole effect being babyish, crude and perhaps not understandable. Correct speech becomes then a matter for long and expert training.

Moreover, a child whose speech is delayed abnormally is handicapped for the race of life, in proportion to the lateness with which speech has been begun. The mind, having lacked the aid of speech for its development, is retarded. The work for which the mind in those early years was best fitted, that of the development of speech, has not been done, and now, when the mind is less ready to take on that task, it nevertheless must be undertaken and more time lost. The mind at, say 8 years, may be taking up the developmental activities that belong to the third or fourth year. The child thus finds himself not fitting into the regular grooves of life, and so life does not run on naturally. Being out of the natural grooves of his environment he requires especial training, not

merely for his speech, but also for his mental development in general. All of this is often rendered all the more difficult because of his general mental backwardness. It may require years and untold trials on his part and on the part of the parents before he finds his natural level in the world. Therefore one must look on hearing mutism as a disorder of serious importance.

Further Concerning Etiology.—Impairment of the physiologic capability of the peripheral organs of speech is very uncommon in hearing mutism. Tongue-tie, which nearly every parent is concerned about, is extremely uncommon in any form of impaired speech. An increased deposit of lymphatic tissue in the nasopharynx, that is, adenoids, is common in hearing mutism, but, so far as is known, not more common than in normally-speaking children. The same may be said of unusually large faucial tonsils and of enlargement of the lingual tonsil. Other peripheral speech structures are almost always normal.

Considerable discussion concerning adenoids as an etiologic factor in hearing mutism has taken place. Gutzmann declares that adenoids are important and notes his success with these cases after the adenoids have been removed. This would be a simple solution of the etiology of many cases if its truth were certain. A. Liebmann does not believe in its truth. Undoubtedly thousands of infants have adenoids and develop speech normally, where one fails. Undoubtedly, also, infants with graver peripheral disorders interfering with speech, especially children with cleft-palate, show no tendency to remain mute. And yet, the idea that adenoids may be a factor in the etiology seems theoretically possible, and in spite of the fact that Liebmann has had them operated on frequently without causing the awakening of speech. Gutzmann believes in a nervous inhibitory effect of their presence on a child trying to feel its unbroken path into the devious ways of speech. Reasoning from adult experience with the confusing effect of remnants of adenoids, and of nasopharyngeal secretion on the sense of position of the throat organs while talking, one feels that a similar effect must be present in adenoid children. The actual interference with the movement of the soft palate when the adenoids lie low and are very large is also to be estimated. However, since this adenoid effect is not sufficient to interfere with the development of speech in most children, one feels that, granting its capability of producing a slight inhibitory effect, the effect produced is not sufficient, without an underlying central tendency to mutism, to determine the failure to develop speech. The effect of the adenoids is probably always secondary to a mental physiologic disturbance, but possibly in certain cases is determining. And a similar argument would hold theoretically for excessive hypertrophy of the faucial tonsils and possibly also for the lingual tonsil.

In so far, however, as adenoids affect markedly the mental processes themselves, as they do not uncommonly, and as they do, especially seriously, in the condition called aprosexia, might they be responsible through this affect on the mind for hearing mutism; and, also, in so far as they tend to produce middle-ear disease and deafness, might this also be true.

Regarding disturbances of mentality as bearing on the etiology, Liebmann emphasizes the frequent lacking in capability of attention, and of memory for spoken words. Undoubtedly, such defects are common and important. He also speaks of specific disturbance of other senses, as of taste, sight, etc., in individual cases. One suspects that he has here entered the realm of the feeble-minded. But undoubtedly the mental processes are impaired in many of these cases, slightly in the backward children, and much more in those who are actually subnormal. Gutzmann quotes Ziehen as presuming on the presence in certain parts of the speech tract of an anatomico-pathologic defect in development and thinks the presence of such conditions probable, but quite undemonstrable. Liebmann thinks they are unlikely. And Gutzmann acknowledges that they, at any rate, can in nearly every case be overcome by speech training. Coën thinks the excessive feeding of alcoholics to the child is responsible for certain cases. Birth traumatism, as well as other traumatisms on the head, are responsible for feeble-mindedness, and very probably for lesser and localized cerebral injuries affecting the development of speech. I have seen two cases in which rachitis had been a prominent condition in the child's medical history, and believe that prolonged malnutrition from various causes produces physiologically impaired brain-cells retarding and disturbing all mental processes, including the development of speech.

But even in the so-called "pure" instances of hearing mutism, that is, cases in which defects in the hearing, in the peripheral speech organs or to a demonstrable degree in the brain are absent, the etiology lies in some sort of disturbance in the mental physiology. Gutzmann explains most cases of "pure" hearing mutism on the ground of an unusual absence of desire for movement in general and for speech movement in particular. This, he thinks, is merely an exaggeration of a variation which holds for all normal children. He points out the wide range of difference as to desire for, and skill in, movement in general, and in the function of imitation and as to the readiness with which children acquire and develop speech. And he calls attention to the hereditary element in hearing mutism, showing that in a large percentage, ancestors in the family have developed speech late. But other forms of nervous disorder are also met with in the ancestry. If one does not forget the cases in which such an explanation is evidently insufficient, and if he does not forget to search for obscure possible disturbances in the general physiology capable of affecting the action of the brain, and if he bears in mind the harm of quietly submitting to such an exaggerated and harmful variation in the normal physiology, such an explanation may at present be tentatively accepted.

Diagnosis.—The existence of mutism has been determined before the physician is consulted. The examination concerns questions of causation, mental status and prognosis. Deaf-mutism and the higher grades of feeble-mindedness are first to be eliminated; then the various possible etiologic factors are to be weighed, and thus a clear opinion as to the condition of the patient arrived at.

The clinical picture presented by hearing mutism is that of an usually somewhat oddly-acting child, who can be shown to hear and understand what is spoken, who gestures a great deal to indicate his desires and displeasures, but who speaks, if at all, only a few common words, and who apparently has no disposition to employ speech like other children. Often, chiefly through the mother's deficiencies in handling the child, but also through its necessary mental isolation, the child is badly behaved, willful and spoiled. The child of dull hearing may present a modification of this picture in that he may not understand so well as other hearing mute children. Also the child having an impaired sensory spoken word center, although he hears what is spoken, is quite unable to understand its meaning, and gives much the same impression as a deaf-mute child.

Usually in the mute young child considerable observation is required before the more moderate degrees of deafness can be determined certainly. The child's understanding of speech is so considerable that he is apt to be thought to possess normal hearing, and it may be some time before this dullness to spoken sounds is realized. He may continue dumb indefinitely, but is more likely to develop quite early a speech which is crude and inaccurate in proportion to the dullness with which the spoken words affect his mind. Much depends on the loudness and clearness of the speech in the domain of his environment.

It will be well to speak briefly here of sensory mutism, which is so apt to be confused with deaf-mutism that such patients are sometimes sent to deaf-mute institutions, to the detriment of the child's future. The condition is extremely rare, but is probably often overlooked. The ear is intact and translates the sound waves into nervous impulses, but, owing to the physiologic incapability of the sensory spoken word center, the spoken sounds are not perceived as such by the mind. The child hears all sounds, but does not attribute a speech-meaning to spoken words. Therefore he understands as little of speech as the deaf-mute. Differing from the deaf-mute it can be shown that he hears; he even imitates spoken words, but without knowing their significance. He does not respond to spoken requests, although it can be shown that he hears, but his general intelligence is confirmed by his ready response to gesture.

Examination of the peripheral speech organs in the hearing mute child almost always finds them normal. Care should be taken, with respect to the examination of the nasopharynx, to remember that a certain amount of lymphatic tissue belongs normally in this situation.

The determination of marked defects in the intelligence may be disclosed by inability to walk or marked peculiarity of the gait, by physical stigmata of degeneration, by constant drooling, by hereditary considerations, and by other grosser evidences of deficiency in intelligence.

The mental status of a speechless child who may or may not be slightly feeble-minded is often hard to make out with certainty. Most of the carefully worked out tests of Binet and Simon, designed to determine the mental status of children, presume on the existence of speech and make use of it. The difficulties are increased sometimes by pecu-

liarities in the manner of a speechless child, whether it be feeble-minded or not. Lacking in the mental development which comes only through the constant employment of speech, pampered by wrongly-understanding and wrongly-sympathizing parents, the child often exhibits oddities, violent opposition to authority or suggestion, a lack in self control and altogether presents a manner so peculiar as to cause additional confusion concerning his condition of mind. The physician attempts by questions to learn whether the commoner objects are known, whether the child carries out requests suitable to the age of the child, whether the attention can be held, whether the actions of the child generally tend towards or away from normal intelligence, etc. Where doubt exists as to feeble-mindedness, one may proceed to treatment; for even though feeble-minded, the child should, if possible, develop speech, and in the course of treatment after a short time, a more exact understanding of the state of mind will be arrived at.

Treatment.—Treatment has reference first to the elimination of contributing causes and then to the encouragement and development of speech. Impaired conditions of nutrition or of the health generally, and all such conditions capable of having a bearing on the physiology of the brain, should be given attention. And treatment to this end is advisable regardless of the physician's possible belief that the general health is not a contributory cause of the condition of speechlessness. For it is wise to render as easy as possible a difficult task by setting aside conditions capable of detracting from the normal vigor of the child.

In this connection, if adenoids be present and there be a suspicion of their contributing to mental sluggishness, they should certainly be removed. When probably not affecting the mind, but large enough to interfere with nasal breathing, their removal is also strongly advisable. Not only does hindrance to nasal breathing disturb those sensations natural to the nose and throat, not only is interference with the soft palate such as large and low-lying adenoids may produce, disturbing to the development of speech, but more than this, the sensation produced by a large foreign body in the nasopharynx, such as a large mass of adenoids produces, is capable of greatly perverting any effort at speech production. And this remark holds also, though perhaps to a somewhat lesser degree, to the faucial tonsils if they extend well out into the lumen of the fauces, or crowd well upwards into the supratonsillar fossa; and very occasionally, also, to large lingual tonsils. Such operative procedures will not, of course, of themselves, inculcate speech in a mute child.

The first direct problem which one usually faces in a hearing mute patient, is the conquest of the child's total lack of inclination to make the effort to talk; second, to encourage and guide the child until the speech is perfect; and third, to simultaneously undertake the especial general educational training necessary to place the child on a level with others of his own age.

The earlier a hearing mute child can be brought to talk the less will be the difficulties of his later development. Therefore, treatment should

be undertaken as soon as abnormality is suspected. To feel the least inclination to talk seems to be the last thought of such a child. The efforts usually made by the mother of continually urging the child to "say" this and "say" that, are apt to be worse than useless, because they are apt to inculcate a state of stubbornness to speech, which has been given the name of aphasia voluntaria. Usually the most round-about way is the most successful. Let one set about gaining the confidence of the child by adapting himself to the child's inclination to play; let him study the art of amusing the particular child, of being a desired play-mate, and then tactfully lead the child into playing with his speech. Employ pictures of single common objects in great variety, or attractive colored scenes, or actual objects of interest to the child; encourage him to become interested in looking at these things while his ear is being stimulated with corresponding distinctly-spoken words. Use one word at a time very clearly spoken; come back repeatedly to the same object and thus give opportunity to repeat its name over and over; but keep up the variety and interest; know no such thing as impatience; if the child does not respond, pay no heed, excepting to continue and to introduce new expedients. Also demonstrate to the child in the manner of play the association of the sound with the movement of the lips and throat, and demonstrate the feeling of the outward-moving air on phonation. The least effort on the child's part is to be given praise and encouragement.

When the child has at last broken his silence and begun to try to imitate the sounds heard, a great variety of pictures may be employed as excuse for the multiplying of words. The eye and the picture serve to teach the meaning of the word spoken, and the pictures keep up the interest. Later more complex pictures may be used, and short sentences descriptive of scenes in them introduced; the child repeats the spoken sentence, and is also encouraged to volunteer descriptive words and sentences. Further methods will depend on the child. In some cases the little patient will work out his speech from now on quite perfectly. In others a laborious system of developing the use of the sentence will be necessary. In most patients certain elemental sounds must be taught the child in detail, by demonstrating the placing of tongue, lips, etc., for their production, and in certain patients a great deal of this teaching must be carried out.

If the child's age and mental capability permit, it will usually be well to teach writing coincident with learning to speak. The sight helps the ear in clarifying and memorizing the word. As time goes on, reading, number work, spelling, drawing, etc., are to be adapted to the individual child's capabilities. The backward child will, as a matter of course, require much more and longer attention than the bright child. In the absence of feeble-mindedness practically all hearing mute children can, with patience, acquire normal speech.

ADVISABILITY OF SENDING TUBERCULAR PATIENTS WEST

DON A. VANDERHOOF, M.D.
COLORADO SPRINGS, COLO.

In advising tubercular patients to come to Colorado or any of the western states, the family physician should take a number of things into consideration.

1. The financial condition of the patient.
2. The physical and moral condition.
3. Temperament of patient.

No patient should be sent to Colorado who has not \$1,000 to \$1,500 at his command, or who cannot afford to spend a minimum of \$100 a month as long as it is advisable for him to remain here. And you will find that most must remain at least six months to a year and some longer.

All patients sent should be referred to a reputable physician in whatever city the patient goes, for the simple reason that most all, if not all, need medical advice at one time or another, and it is much better for them to know who to go to, than to take the advice of anyone they should happen to meet "for reasons well known to all."

People come here with the idea that climate is all, but how mistaken they are. They know nothing about the care of themselves, and they think it is not necessary, as long as they are in this climate. Those who are able, take long walks and rides, forgetting that they are now living at an altitude of 6,000 feet, which calls for a great deal more work on that heart which is already overworked. And in a short time they return home, some one way and many another. This is the reason they should see a reputable physician as soon as they arrive here. They need advice, especially as to the best way for them to take care of themselves, for as you all know the cure in most cases is very slow indeed.

Why is the climate here beneficial? In the first place, there are very few days in the year that the sun does not shine, thus permitting, of course, the sitting out of doors with much more comfort than one can in the east. No fogs or continual damp, rainy weather, no hot muggy days, which all tend to produce that feeling of oppression that most tubercular patients complain of. And last, but not least, the good effect of the altitude, for as you well know it takes the lymphocytes to destroy the tubercular bacilli, and in this altitude the lymphocytes are increased 15 per cent., according to Webb.

There is no question in my mind that all patients running a temperature should be in a sanatorium for some time after their arrival here, and the smaller the sanatorium the better, for I feel that in the smaller sanatoriums they can be looked after much better, and they are more willing to be quiet than at the larger ones where there is so much

going on all the time. The incipient cases, or at least the most of them, can be handled outside of the sanatoriums.

I have seen one large sanatorium that is run on an almost perfect basis, and that is the Modern Woodman Sanatorium at Colorado Springs. Dr. Rutledge and also Dr. Giese are to be congratulated on the way they handle the work there, for I have never yet seen a better system anywhere for the handling of tubercular cases.

In sending patients here by all means take into consideration the condition of their heart and kidneys, for an altitude of 6,000 feet, as I said before, will not be the best place for these diseased organs.

Patients who cannot bear to be away from their folks and who easily become discouraged should be sent to a sanatorium in their own state. There is a first class one at Ottawa, and how much better it would be for them to be there than away among strangers, for no one can get well if home-sick all the time, or trying to get along in some western city with very little money, eating at the cheapest of restaurants and rooming in the cheapest of rooming houses, making the cheapest very dear in the long run for that class of patients.

Of course, all western cities try to do the best they can for that class of patients, but nevertheless, they would do much better without the altitude and clear Colorado weather, than trying to get along the way they do.

Those who are not fairly strong and those who are in the late stages of consumption stand the trip poorly, and so is it not much better for them to go to one of the good sanatoriums near their home, and there remain till they are well able to stand the trip, and then spend some months in the land of sunshine?

Many are the patients we see come here with just enough money to get here, and so weak they can hardly leave their beds. Alas, how many of these poor creatures do we see get well? Very few.

I am afraid there is a tendency for many family physicians to treat their tubercular patients at home till they find that after many months they have steadily been growing worse. Then telling them their only chance for life is to go to Colorado or some other western state. Have they been doing as they would like to have been done by? Why not at once tell them they have a curable disease if taken early, then if their financial condition is such, send them at once into a higher altitude where we have an average of 42 per cent. of clear days in the year. Or if they cannot afford that long journey, either on account of financial or other reasons, advise them at once to go into one of the sanatoriums at or near their home till they become trained in the care of themselves as well as with the people with whom they are associated. Would this not be doing the patient as well as the city in which they reside an everlasting favor?

THE CARE OF THE FAR ADVANCED CONSUMPTIVE *

ETHAN A. GRAY, M.D.

Medical Superintendent of Chicago Fresh Air Hospital

CHICAGO

Introductory.—It is essential, at the outset, to recognize that the far advanced consumptive is a very different individual from the patient in the incipient stage. He is no longer rebelliously inclined; he has come to realize through untoward happenings that his disease is a very serious problem; he knows that he has, hitherto, lost out in his fight. He is, consequently, willing to do what he should have done at an earlier period, viz., obey orders. He is ready to stay in bed, he is ready to cooperate, he is ready, at last, to try to save his life, at a time, too, when his chance of success has nearly diminished to zero. His lungs are crippled by pleurisy and cavity, his stomach often refuses its duty; kidneys, bowels, bladder, larynx may, too, have become the seat of secondary tuberculous infection. Persistent cough breaks rest or is so violent as to cause vomiting. And with all this, because of increasing weakness, comes increase of carelessness regarding spitting, with consequent increase of danger to others. As the condition of the patient has changed since he passed from the early to the later stages, so must the treatment change, and in many respects.

Open Air Treatment.—As is well known, continuous open air life is regarded as one of the great factors in the treatment of the incipient case, in cold, as well as in warm weather. It is a great error to apply this treatment promiscuously to advanced cases. Admitting that some cases do well in cold weather, the severities of the winter season constitute formidable handicaps in most cases. The patient in the advanced stage has usually little fat on his body; his total blood-supply has become diminished; he becomes susceptible to changes in the weather and suffers from rheumatoid pains which do not yield to the antirheumatics, being due, in fact, to tuberculous toxin. It becomes necessary, therefore, to place such a patient in shelter; in a room, for instance, provided with large windows, which allow of sufficient air, but which also permit the room to be warmed on occasion. The value of all this is especially evident when it becomes necessary to change the sweat-soaked garments of the patient; or when the patient has become too weak to leave his bed for bathing or other purposes.

Furthermore, in winter, the difference between the indoor and outdoor temperature is so great that gaseous interchange is easily sustained, and an abundance of fresh air is easily provided by the open window. In summer, the outdoor air offers the greatest comfort to the advanced patient. In fact, outdoor air and continued rest will contribute, more than anything else, to the comfort of the advanced consumptive. *The patient must be comfortable*, else he will not keep quarantine. Unless he be comfortable he will be stubborn, and he then becomes a danger to

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those about him. *We cannot expect a sick man to bear hardships which well people will not undergo.*

Food.—Milk, eggs and meats have constituted a large part of the diets for consumptives ever since the world awoke to a proper understanding of the hygienics and dietetics of tuberculosis treatment. However, in the general enthusiasm, it has been assumed that forced feeding, superalimentation, excessive calorie intake—what you will—was suited to all cases of consumption. As far as the advanced case is concerned, this is all wrong. Even in the absence of evident digestive disease, the appetite of the consumptive is capricious and especially does he object to the high calorie intake. The reason is that he does not digest well.

Permin (*Internat. Beitr. z. Path. u. Ther. d. Ernährungsstörungen*, 1910) has shown the frequency of subacidity and even of anacidity in cases of tuberculosis, the acid deficit increasing as the case progresses. Not only this, but ulcer of the stomach is not infrequently met with. Under these conditions it becomes necessary to consult the patient's wishes in the matter of food. He should, therefore be allowed a general diet—choosing and rejecting at will; this, of course within reasonable bounds.

He will often demand so-called heavy food, e. g., corned beef and cabbage, pickles, smoked meats and fish—and digest them, whereas he has previously had difficulty in ingesting and assimilating much more digestible and apparently more suitable foods. When, however, manifest disease of the bowels occurs, more care must be used in food selection. fluid foods are advised here, although in the severe forms of the disease no dieting has availed.

Clothing.—It is safe to be guided by the patient's comfort in the matter of dress. Sufficiently thin and light clothing in warm weather, changing with the advent of cold weather to heavier clothing, according to the patient's needs, should be the rule. The patient who clothes himself in cotton or half woollen garments often is weighed down by them to the point of discomfort—this applies to cotton comforters and cheap blankets. It is therefore good policy to purchase the more expensive woollen blankets and woollen underwear. In cold weather it will be found necessary to clothe the bed patient warmly. Woollen stockings, cap, mittens and heavy night gown being added to the suit of heavy underwear.

Medication.—The medicinal treatment of the consumptive, apart from the specific lines, is almost entirely symptomatic and may be directed toward complications arising in the larynx, stomach, intestines, rectum, bladder, etc.

Laryngeal tuberculosis offers the most distressing picture of all; what with dysphagia, constant throat pain, thirst and hunger, the patient's cup of suffering is filled to the brim. It becomes necessary to spray or swab the thickened and ulcerated epiglottis with 3 or 4 per cent. cocain solution, before the patient can venture to swallow a mouthful of food or drink. Once or twice daily it is advisable to insufflate equal parts of powdered iodoform and anesthesin. This combination frequently gives

extended relief. Such medication as is here mentioned can be applied easily and requires but a little practice on the part of the physician. The physician should practice using the throat mirror far more frequently than he does. There is no good reason why the condition of the consumptive's throat should not be as fully known to the physician as the condition of his lungs. Attention to the larynx would often result in local applications which would be of far more use in allaying a troublesome cough than the eternal sedative cough mixture.

As already noted, the consumptive's *stomach*, more often than not, gives him much trouble. He has pain after eating, bloating and vomiting. Too often, in the late stages, no medicine avails. However, many cases are relieved by muriatic acid and pepsin after meals. Orthoform, bismuth, even opium, have their place here. Iodoform has also been of service. Intestinal indigestion and active bowel tuberculosis present their problems. Here may be used vaselin 5i to 5ii, doses 3 to 4 times daily, soluble silver solutions, guaiacol carbonate, ichthyol, iodol and other intestinal antiseptics; and with all, good results will, at times, be obtained. Sad to say, however, many cases prove extremely obstinate to any or all of them.

I mention vesical involvement to call attention to the fact that bladder tuberculosis independent of, or in connection with kidney disease is, often enough, to be found in the advanced case and demands expert cystoscopic examination. The instillations of argyrol solution and iodoform emulsion are to be recommended. Boric and other washings of these bladders have not been so satisfactory. In some cases of incontinence, formaldehyde preparations internally have been of benefit.

In view of the above mentioned possibility of renal disease, each case must be treated individually and only after a thorough diagnosis of the condition has been made.

Perirectal abscesses are bitterly complained of by the tuberculous patient and should be attended to, surgically, early. These cases call our attention to the strain put upon the perineum in the act of coughing. While suffering from such an abscess the victim will refrain from coughing as much as possible, even when his cavities are filled with secretion. Perirectal abscesses are frequently thought by the patient to be piles; all complaints directed to this region should be carefully investigated.

Cough Medicines.—The advanced consumptive suffers much from coughs both productive and non-productive. The productive cough should not be interfered with save when the night's rest is badly broken—then codein or heroin will usually fulfill the indication. As the case progresses, opiates per os often fail to produce the desired result. Recourse should be, then, to the needle and morphia. In connection with the obstinate cough of the advanced case, I venture to again direct attention to the larynx and local treatment.

Tonics.—These are of limited value although patients often state that appetite is improved through their administration. Alcohol is to be barred except, perhaps, in the terminal stages where the subjective

exhaustion demands relief—then use any spirituous, vinous or malt liquor.

In the main, the remedies to be used in consumption are such as would be given in analogous conditions independent of tuberculosis.

Constipation.—Constipation often is the bane of the consumptive, whether caused by the opiates contained in cough mixture, or by the lack of exercise, it is often difficult to correct. The usual cathartics must be frequently administered and must be changed, one for another, as tolerance for the one in use becomes established.

Constipation is also often responsible for fever; another reason why it should be attended to. Among the many remedies which we have used, I would mention vaselin, which is given in teaspoonful doses three times daily. Vaseline is not absorbed by the mucous membrane and with some patients, facilitates a daily clearing of the bowels.

Tuberculins I do not wish to consider here, to-night, for the reason that I do not believe that the far advanced consumptive is definitely benefited by their use.

Hospitalization.—The arrest of disease in the far advanced consumptive occurs occasionally, the cure never. The danger of infection increases in a direct ratio to the progress of disease. The duty of the profession lies, therefore, along the line of isolation.

But, in the case of a man well from his throat up, and full of mistaken courage, it becomes a matter of difficulty to establish and maintain effective isolation. Yet it must and can be done, and done only by education. Reiterated advice concerning the danger of careless coughing and spitting, instruction in the use of the thermometer and pulse counting will accomplish much. A patient who recognizes that fever means disease and that rest is essential, is easily kept in bed for many months, even until death. Remaining thus in bed, and observing the prescribed rules of conduct in his case, the patient becomes practically isolated. However, it is often difficult for the physician to train his patient; financial reasons or lack of time may preclude frequent visits. The patient becomes, or is, stubborn and disobedient; the home surroundings may be such as to militate against any improvement, while a further infection of the family is promoted.

Here, the hospital offers itself. The far advanced case is taken, cared for, held under proper discipline, and becomes, as already noted, isolated. He thus ceases to be a danger. Where it is not possible to keep a patient indefinitely in a pay hospital a two or three months' sojourn will often serve to properly train the patient in the way he should go and he returns home educated and careful. In order to keep the patient in hospital, he must be contented, therefore willing to stay there. He must have comfortable accommodations and good food. He must feel, sensitive and suspicious as he is, that everything that can be done for him is being done. If the hospital be a public one it must be disassociated from the general hospital and especially from the poor farm administration. It has never yet been brought home to the supervisors of the poor of this or of any other Illinois county that patients suffering with tuberculosis

must be cared for differently from other sick. There is no police power given the authorities whereby the consumptive can be held as is the small-pox patient. Therefore, when the patient revolts at food furnished at a pauper or jail rate per diem, and unless he feels that he is receiving as much, or more, in the hospital than he can obtain at home, he will leave the institution, return to his family and there continue his interrupted work of spreading tuberculosis.

The far advanced consumptive requires much in a hospital as well as out of it. He finds that he can do as he pleases at home: naturally he prefers the home. Given reasonable rules and discipline, however, add good food and good beds, and the patient becomes contented, remains in the hospital, isolated. Patients in public hospitals for consumptives have complained of bad food, insufficient bed clothes, and unusual meal hours and of being compelled to do ward work. Such complaints will account for the brief stay of patients who have homes to go to.

Tuberculosis is the most common of all diseases. It is likewise the most costly. Its eradication depends on the effective isolation of each case, to which must be given close study and consideration if we are to accomplish anything at all.

There can be no generalized treatment of the consumptive; for each patient presents separate problems which must be solved for him alone and they must be solved in the home as well as in the hospital.

2744 Pine Grove Avenue.

THE PRESENT STATUS OF TUBERCULIN AND ITS THERAPEUTIC LIMITATIONS *

JOHN RITTER, M.D.

Assistant Professor in Medicine, Rush Medical College
CHICAGO

It is very evident from our present knowledge that not a single so-called tuberculin is of definite chemical composition, nor have we any tangible knowledge what the active therapeutic agent in this remedy may be. All the various bacilli of the acid fast group, human, bovine, avian, grass, smegma as well as those found in cold-blooded animals, like blind-schleichen, turtle, etc., all produce during the process of growth and multiplication a tuberculin-like substance, differing only in the amount of its active but still unknown specific body, and on which the value of the various tuberculins depends. They do not differ qualitatively, but distinctly quantitatively. All the tuberculins with which we are now acquainted, and from whatever source derived, are mixtures of a specific, with more or less non-specific bodies, mostly albuminous polyptoid substances, fatty bodies, salts, odoriferous principles, etc. Tuberculins from bouillon cultures, from albumin-free media, or more direct from the bacillary bodies, a bacillary extract, all are clinically and biologically alike. Up to the present we have not been able either by chemical or biologic

* Read before the Chicago Medical Society, April 2, 1913.

methods to isolate or produce the active principle, or clinical agent on which this specific effect depends. From time to time various attempts have been made, by earnest and painstaking workers, to isolate, if possible, this active substance. Scientifically experimental workers like Deycke,¹ Much and Leschke,² and others, are arriving at a nearer solution of this intricate problem. Much has proven, after many months of laborious work and experimentation, that the tubercle bacillus is capable of disassociation or being opened up as he calls it "Aufschliessungs methode"; that if the dried tubercle bacilli are macerated for some time in a weak solution of any of the organic acids like malic, citric, lactic, then centrifuged, the supernatant fluid will contain, after neutralization of the acid, a substance that will correspond in every respect, clinically, chemically and biologically with any of the various tuberculins. This is, up to date, the nearest approach to a pure tuberculin. Now, if to this neutralized supernatant fluid alcohol is added, a precipitate will be formed, which, if separated from the liquid and redissolved in water, will, on animal experimentation, act precisely like the fluid portion from which it was separated, or if this alcoholic precipitate after being redissolved in water is reprecipitated with ether-alcohol, and this precipitate is again dissolved in water, will possess all the clinical properties that the redissolved ether or the alcohol precipitate or watery solution has. In other words, the alcohol insoluble and ether-alcohol insoluble precipitate if redissolved in water, and the water soluble filtrate are all alike in biologic results. Much³ and his associates have gone a step further along this line of experimental research. They observed next that the residue of the bacillary bodies in the centrifuge tube was no longer acid or alcohol fast, did not take the Ziehl-Nielson stain, nor did it take the modified Gram stain as devised by Much, and further that this residue was capable of being separated into three component parts, an albuminoid substance, a neutral fat or fatty alcohol and a fatty acid or a lipid substance, and that each of these three constituents of the bacillary bodies plus the tuberculin extracted from dead bacilli, all four components, if injected into the tuberculous is capable of producing in the so injected organism separate and distinct antibodies, and the name of antigens, separable or partial antigens, has been applied to these components by Much. Hence, from our present knowledge concerning tuberculin, it is very evident that until we discover and isolate its active principle, either by chemical or biologic means, the use of tuberculin as a therapeutic remedy can only be in an empirical, unsatisfactory and unreliable manner, without definite dosage. May not history repeat itself? As an analogy may be cited the fate of one of the most used but also one of the most abused of all the known therapeutic remedies. One hundred years ago to-day opium underwent the same scrutiny that tuberculin is undergoing at the present time. The anodyne, sedative and soporific properties of opium were quite well known at that time, but the

1. Deycke and Much: München. med. Wehnschr., Jan. 21, 1913.

2. Much and Leschke: Brauer's Beiträge, vol. xx, No. 3.

3. Much: München. med. Wehnschr., 1911, No. 11; 1912, No. 13.

isolation of its active alkaloidal principle seemed to be an utter impossibility. It was not until 1816 that an Hanoverian apothecary, named Surtiner, first demonstrated that the active value of opium is dependent on a definite body which he designated as morphin. It had taken him eleven years of experimentation and labor to isolate this principle, and some of his co-workers in this field, particularly Dorosne, an apothecary in Paris, were nearer a solution of this problem, but not early enough to recognize the importance of this then great discovery. If it has taken eleven years to discover or isolate this first alkaloid with which we are now acquainted, considering the knowledge of chemistry and biology disseminated at that time we may have good hope that with the present improved knowledge and rapid advances made in these sciences, with improved apparatus and a better technic we will be able to isolate in the very near future from tuberculins its specific and active principle. Before leaving the subject of tuberculin, what it is, I wish to call attention to the fact that many tuberculins are marketed as fat free, as toxin free, as albuminoid free. These are all more or less misnomers and are misleading. A tuberculin toxin free is no longer a tuberculin, nor albuminoid or fat free, as the very component parts of the dead bacilli will show. So much for the present status of tuberculin. Now as to its limitations.

Tuberculin finds its best application as a diagnostic measure. Three methods are now in use. 1. Intracutaneously, after Ch. Mantoux, called by the Germans "die Stichmethode," injecting a milligram of old tuberculin parallel to the skin; this is applied to adults. 2. Percutaneously, after von Pirquet, by denuding the upper layer of the epidermis, to the corium only, and applying a very minute amount of pure tuberculin; used chiefly in children and young adults. 3. Cutaneously, after Moro, using an ointment composed of equal parts of old tuberculin and lanolin, rubbing a small quantity well into the previously washed and cleansed skin; applicable to infants and very small children. To these methods of tuberculin application by the cutaneous way may be added, 4, subcutaneously or the therapeutic method, and in this use tuberculin finds its chief limitations. For the proper selection of cases suitable or non-suitable for this form of medication I can do no better than to reiterate what has so often been said by the most competent observers and workers in the field of tuberculin therapy. "Tuberculin is a most valuable remedy in the treatment of all those cases of pulmonary tuberculosis in which the lesion is limited, in which the disease is pursuing a quiet, slow course without pronounced feverish conditions and not much general disturbance, also in cases of afebrile conditions and a fairly good appetite, in slow chronic cases and cases that seem to be stationary, but in all cases of advanced pulmonary tuberculosis with laryngeal, renal or intestinal complications and high fever, showing a general disturbance, the use of tuberculin is strictly contra-indicated; cachectic individuals, and prostrated tuberculous persons also are unsuited for the tuberculin treatment. It should be given very cautiously to incipient active tuberculous patients, because even very small doses may react very vigorously,

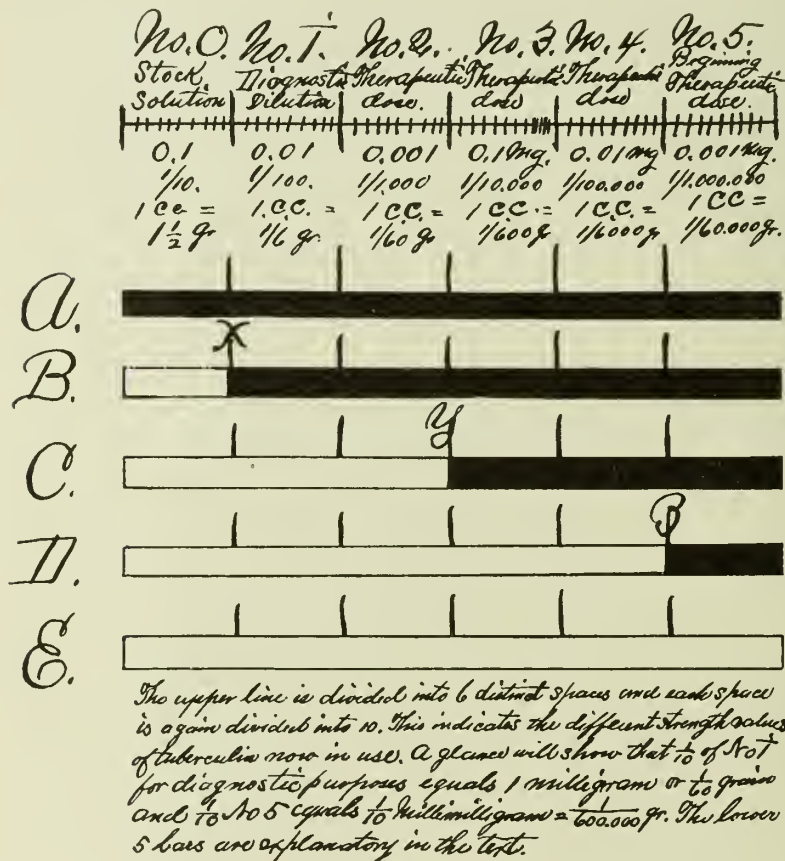
whereas large doses in old tuberculous cases do not react at all." A tuberculous subject who is also the victim of nephritis, or Bright's disease, is not suitable for the tuberculin medication. In some cases of tuberculosis the injections of tuberculin are frequently followed by the presence of albumin in the urine, but this must not be construed as nephritis. That tuberculin injections will often produce kidney permeability is very well known; but casts or other anatomical elements are as a rule not found present in the urine. Tuberculin treatment has been condemned by some writers who express a fear that the injection of so powerful a remedy into a tuberculous subject would favor the mobilization of bacilli. We have no positive proof that in using tuberculin therapeutically this has ever taken place, and yet we have positive proof that in using tuberculin in a suspected tuberculous person in large doses for diagnostic purposes this may take place. In a series of sputum examinations from suspected persons with negative bacilli content I found that a second sputum test following an injection of one milligram of old tuberculin was often followed by a bacilli positive reaction, and L. Rabinowitsch⁴ and Baemeister⁵ have proven that in a number of blood examinations in suspected tuberculous individuals, where no bacilli were demonstrable in the circulating fluid, that after the use of a diagnostic dose of tuberculin tubercle bacilli are sometimes found in the blood in quite a few cases. Occasionally while using tuberculin therapeutically, even in very minute doses, the injection may be followed by a very severe reaction, and we must not at once conclude that the subject is hypersensitive. In the use of tuberculin as is now in vogue, six separate dilutions of this powerful drug are by common usage recommended, each one ten times stronger than the one next in order, and it is more than evident that in the use of such a remedy if we should give to a suspected person one milligram tuberculin equal to 1/60 grain for diagnostic purposes and then a moment after, using the same hypodermic syringe, give one-tenth of a milligram equal to 1/600,000 of a gram, that untoward effects may manifest themselves; hence, a separate syringe should be used for each separate dilution. The question has often been asked why we begin with such minute, infinitesimal doses in order to safely influence the tuberculous person. I cannot do better than to direct your attention to a graphic picture which I have often used to explain this phenomenon:

Let the lines, A, B, C, D and E represent five patients, and let A represent a person who has never been infected with tubercular virus, while B, C, D and E represent tuberculously infected individuals. A, never having been infected is tolerant to enormously large doses, is not sensitized and will tolerate from one to ten centimeters or more of any of the solutions in our series, but not so B, C, D or E, who have been infected, and having been infected, they are more or less sensitized, but we do not know up to which point or to what dosage. We know A's tolerance, but we have up to the present time no true and positive knowl-

4. Rabinowitsch, L.: *Medizin. Gesellsch., Freiberg in Breslau*, Nov. 19, 1912.

5. Baemeister: *München. med. Wchnschr.*, Feb. 18, 1913.

edge about the tuberculin tolerance of either B, C, D or E, the infected persons. Let us assume that B's tolerance ceases at X, and if by any sure means we could ascertain that, we could begin our tuberculin medications a little short of that point and gradually enroach on sensitiveness, but with our present knowledge we have no absolute way to know this in advance, and for that reason we must begin at the extreme end the most minute dose, and slowly and gradually advance the dose. C's tolerance is at Y, and D's at Z, and the same applies as in B's case. E is also tuber-



culously infected, but is so much sensitized that he will not tolerate the most minute quantity of our dilution of 1-1,000,000, and we can enroach on his sensitized state only by repeated minute injections and at longer intervals; it is for that reason that in all the four given cases of infected persons the initial therapeutic dose should be infinitesimally small so as to ascertain the individual's tolerance; when once that has been established correspondingly larger doses may be given. About the merits or demerits of the various tuberculins on the market it will not be necessary here to speak. I wish only in closing to call attention to the fact that

Lawrason-Brown⁶ at Lake Saranae, at the Tuberculosis Sanatorium, has for many years used in the treatment of suitable tuberculous cases a mixture of tuberculin and a suspension of bacillary bodies or endoplasm, anticipating by many years the contention made by Hans Much from painstaking research work that to secure the best results we should use tuberculin plus the bacillary body components in order to produce not only antibodies against tuberculin, but also against all the elements which constitute the bacillus, to produce so-called partial antibodies or protective, defense elements against the whole bacillus itself, thereby producing not only a tuberculin immunity, but, if possible, also a tuberculosis immunity.

3633 Colorado Avenue.

ARTERIOSCLEROSIS

THEO. TIEKEN, M.D.

CHICAGO

Synonyms.—Atheroma, angiosclerosis (Thoma), chronic arteritis (Osler), arterio-capillary fibrosis (Gull and Sutton), endarteritis deformans (Virchow), atherosclerosis (Marchand).

Definition.—A general disease of the arteries, characterized in the smaller vessels by a thickening of all the coats, and in the larger by a gelatinous swelling, necrosis, fatty degeneration and calcification, the process to which the name atheroma has been given (Osler).

History.—Arteriosclerosis was recognized by the early writers, and Morgagni described the gelatinous thickening and ossification in the larger vessels. Baillie described the atheromatous softening and calcification. Boerhave recognized this process as a cause of gangrene. Hodgson wrote an excellent monograph in 1815. Cruveilhier, in his atlas, gives us excellent illustrations. Thoma and Virchow both understood the process and described accurately the changes in the vessel walls.

Our modern views date back to the excellent papers of Gull and Sutton, which appeared in 1872. They had a clear conception of the entire process and their views have undergone no essential changes up to the present time.

The minute pathologic changes have been the subject of much labor during the past ten years and our knowledge has been greatly enriched by the recent works of Aschoff, Klotz, Jores, Moenkeberg and others. Adami has brought out many interesting points which have an important bearing on the clinical aspects of the diseases associated with arteriosclerosis.

Experimental arteriosclerosis has occupied the attention of several pathologists during recent years, and the work of Josue with adrenalin injections paved the way for others. Recently Loeb and Githens have published their work on prevention of adrenalin arteriosclerosis.

⁶ Lawrason-Brown: The Present Status of the Therapeutic Use of Tuberculin. Tr. Natl. Assn. Study and Prev. Tubercul., Washington, D. C., 1912, p. 323.

Etiology.—Heredity plays an important part because some individuals are born with a deficient vascular system. In fact, whole families exist whose arteries are not up to the standard. They are “seconds” as it were. They may have every appearance of normal vessels, both macroscopically and microscopically, but do not stand the wear and tear. You have all had experience with rubber gloves or elastic bandages. They may look the same and feel the same, but one stands rough usage, the other tears or becomes hard.

Age: Arteriosclerosis is one of the natural consequences of old age, but it does occur in the young as well. Fremont-Smith succeeded in collecting 144 cases of this disease in infants (*Amer. Jour. Medical Soc.*, 1908). In fact, arteriosclerosis occurs at all ages, but is most common after the age of forty.

Sex: Over 80 per cent. of all the cases occur in males, and when it does occur in the female, it comes on at a later period. One occasionally finds a well-marked process in young women, but this is not the rule.

Race: It is a well-known fact that this condition is found much more frequently in the races which are heavy meat eaters. People living in the tropics, living on fruits, vegetables and rice, are less frequently affected. Aside from these, there are, according to Osler, four great factors to be considered in the causation of this disease:

1. The normal wear and tear of life.
2. The acute infections, especially syphilis.
3. The various forms of intoxication.
4. Long continued increased blood-pressure.

Among organs of the body the arterial system alone enjoys no periods of rest. They work while we sleep. The heart enjoys frequent periods of rest during diastole; but, distended by the ventricular contractions, the arteries pass their contents along, partly by the elasticity of their walls and partly by an active contraction of their muscle fibers. The entire arterial tree is involved by this process, but certain portions are under a greater strain than others, which accounts for the frequent occurrence of diseased vessels in certain localized areas. Like other organs, they live under three great laws:

1. Use maintains and in a measure sustains structure.
2. Overuse leads to degeneration.
3. In time they grow old and in three or four score years the limit of their endurance is reached and they wear out.

The stability of tubing of any sort depends on the structure and the kind of material used. This also applies to the human body (i. e., arteries). With a poor grade of muscle fibers and elastic tissue in the blood-vessels, some individuals are unable to withstand the wear and tear of every-day life and show evidences of degeneration at 40 years, which do not occur until a much later period in others; therefore, the old saying that “a man is as old as his arteries,” still remains true. The conditions of modern life favor arteriosclerosis. A man is apt to go at high speed all the time and frequently pays less attention to his own body than to his motor car. He is always running at high speed

and does not stop frequently enough to have his body overhauled. Keen competition in business or professional life keeps him always geared to the highest point, and added to this the worries of political and social life, it is no wonder the machinery wears out before its time. After 40 years of age it is exceptional to examine arteries without finding evidences of arteriosclerosis. With each advancing year the arteries become thicker and more rigid on account of atheromatous changes.

Of the acute infections, syphilis takes the highest place in order of importance and the syphilitic disease will be considered first. The toxins of syphilis seem to have a special predilection for the arteries, especially the aorta, which is affected early and often. Next in order come the cerebral and coronary vessels. Tuberculosis, especially the acute type, is frequently a causative factor of arteriosclerosis of the terminal vessels. Typhoid fever does not rank high as a cause of arteriosclerosis. Diphtheria and chronic glanders frequently cause arterial degeneration of a mild degree.

Under the head of intoxication we must consider the exogenous and endogenous poisons. The exogenous poisons to be especially considered are lead, alcohol and tobacco. Lead is a very potent factor and we are all familiar with cases in which arterial degeneration can be directly ascribed to this poison. Printers, painters, artists, and in fact all lead workers suffer from arteriosclerosis to a greater or less degree.

Whether alcohol or tobacco alone have any marked tendency toward causing arteriosclerosis is a much debated question. Of late years there has been a strong revolt against this very popular belief. Lancereau of France rejects alcohol entirely as a cause of this condition, and Richard Cabot holds the same opinion. It must be confessed that in a given case it is extremely difficult to secure sufficient evidence that either alcohol or tobacco is the sole cause. Take a man past middle age who has led a strenuous life, both mentally and physically, who has been a hearty eater and drunk freely, how are we to know what factors have had most to do with the production of arteriosclerosis? We know that overwork will do it. We also know that overeating will do it, but it is difficult to find a man who drinks freely and smokes excessively who does not combine these vices with others equally injurious.

Tobacco is credited with being a potent factor in the production of coronary sclerosis, inducing thereby attacks of angina pectoris. Huchard is a strong advocate of this belief; others equally competent to judge, deny it.

Endogenous toxins, such as are produced within the body, may also play a very important part in the process. Under this heading would come the products of faulty metabolism, as in gout, diabetes mellitus, obesity, the various forms of autointoxication from intestinal stasis, the toxins of Bright's disease, cirrhosis of liver, etc.

Experimentally we can readily produce arterial changes in animals by injecting nicotine, but whether or not enough nicotine is absorbed by the average smoker is still an open question.

High arterial pressure will cause arteriosclerosis if long continued, or at frequently repeated intervals. Within certain limits the pressure under which blood circulates in the arteries varies greatly, in order that the circulation may adapt itself to the ever varying needs of life. Healthy individuals differ in the degree of blood-pressure, but it is rarely ever found to be over 150 mm. of mercury at the radials or over the brachial arteries. The pressure naturally varies at the different periods of life, increasing with advancing years. Unusually high blood-pressure frequently antedates arteriosclerosis.

Overeating is a very potent factor, being far more harmful than excessive drinking. It causes a chronic hyperemia of all the organs and naturally increases blood-pressure. We have a good example of this in obesity, diabetes and gout. I recall a minister who had never taken a drink of any alcoholic beverage, had never smoked or used tobacco in any form, was not a user of drugs and never had done hard labor, but still had a blood-pressure of over 300 mm. He was in the seventies and had always been a very hearty eater, especially meats and pastry. He had put into his system enough food to run at 50 miles an hour, but had never exceeded the speed limit. Absolute rest in bed, a very strict diet and free purgation soon restored this man to a condition of safety and he said he felt much relieved.

Before taking up the study of the pathologic processes, it may be well to refresh your memory a little in regard to the structure of a normal blood-vessel.

You all know that the structure of an artery varies somewhat, depending on the size, but in the main, a general description will enable us to appreciate the structures which enter into its composition. Three main coats are usually given; from within outward they are: the intima, media and adventitia. The intima, essentially the same in all the arteries, consists of a layer of single endothelial cells resting on a rather loosely constructed fibroelastic subendothelial layer, which varies only slightly with the size of an artery. The next layer is the dense inner elastic membrane, the fenestrated membrane of Henle, which separates the intima from the media, and is regarded as a part of the media. It is composed of elastic fibrillae and can be readily demonstrated by using the Orcein stain. The media is the thickest and strongest coat and the one which is most frequently and extensively involved in the degenerative and sclerotic processes. It consists of circularly disposed flat bundles of involuntary muscle fibers, separated by membranous plates of elastic tissue, which in sections appear light and unstained. Delicate fibrillae of fibrous tissue course among the musculoelastic strands. Between the media and the adventitia is an outer elastic membrane similar to the inner membrane in structure, but not so well defined and gradually merges with the outer coat. The adventitia varies greatly in thickness, being relatively better developed over arteries of smaller size than those of larger size. This coat consists of bundles of fibrous tissue intermingled with elastic fibers, and contains the blood-vessels of the artery, the vasa vasorum, the venae comites, lymph channels and nerves.

As we approach the capillaries the media and the adventitia gradually become reduced in amount until the intima rests directly on the inner elastic membrane so long as the structure persists, then directly on the rapidly attenuating media, which is gradually reduced until just before the precapillary arterioles there remain a few scattered irregularly-placed muscle fibers. The adventitia undergoes a similar reduction and is represented by a few scattered fibroelastic strands. The media and the adventitia are both wanting in the capillaries, whose walls consist of a single layer of endothelial cells.

Each artery has its own nerve-supply, consisting of the spinal and sympathetic fibers, which terminate in the deeper layers of the media. The vasa vasorum penetrate the media and end in capillary loops. The intima has no separate blood-supply, being nourished directly by the blood-current.

Pathology.—The more carefully we study the vascular system at autopsies the greater does arteriosclerosis loom up as a fundamental morbid process in the majority of deaths occurring after the age of 40. If trauma, malignant disease, certain types of tuberculosis and the acute infections are eliminated, we are left with a vast mass of cases of cardiac incompetency, aneurism, chronic bronchitis and emphysema, cerebral apoplexy and chronic Bright's disease. The more we study these cases, the more are we impressed with the fact that the terminal event is but an outcome of arterial disease. Now the aorta in some of its divisions is most affected; now the coronary vessels of the heart; again, the large vessels may be entirely free from disease and cerebral vessels greatly affected. In other cases the vessels of the kidney show advanced stages of arteriosclerosis, while the larger vessels are free. In other words, the vessels are not equally affected by the pathologic process, and this *cannot be too strongly impressed on your minds*, because we all are in the habit of judging the condition of the arteries by a rather hasty examination of the vessels of the arm or the temporal group. Absence of arteriosclerosis at the wrist or in the temporals does not by any means exclude arteriosclerotic processes in other parts of the body. Furthermore, we must learn to differentiate between a full, well-developed vessel and one which is really hardened and sclerotic. We must learn to make allowances for the influence which certain other conditions have on the blood-pressure, as cold, fever, fright, cachexia and medication. These all influence blood-pressure, hence also the characteristic "feel of the pulse."

In studying the lesions we are impressed with the fact that they do not all belong to the same type. Some are large, soft atheromatous patches of a semi-gelatinous consistency; others hard, firm and calcareous; some are raised above the endothelium; others are depressed below its surface. Again, one area presents a nodular appearance, while another may show sacculation of the wall with aneurism formation. In some cases we have a general distention of the aorta with increased circumference. In others a narrowing of the lumen of the vessels. Are we dealing with one process or are there several processes at work? This has led to much controversy in the past and the debate is still in

progress — why in one case a sclerosis and thickening of the wall and in another atrophy and thinning? In order to be able to answer these questions, we must understand the nature of the pathologic processes involved, and because it is best understood, I shall take up the study of the syphilitic type first.

There is no question nowadays that the primary lesion in syphilitic arteries is in the media, where the granulomatous area is seen at the terminations of the vasa vasorum. Here there occurs a round-cell infiltration with rapid dissolution of the structures of the media, including both the muscle fibers and the elastic, resulting in a weakening of the wall. This explains at once the thinning of the arterial wall and the tendency toward aneurysm formation in syphilitic disease. I say tendency to aneurysm formation, because aneurysm is the exception and not the rule. If it were the rule, how frequent aneurysm would be! How then is this weakening and thinning overcome to prevent aneurysm? (A) By thickening of the intima. (B) By thickening of the adventitia. Thoma first directed our attention to the thickening of the intima, which he called compensatory hypertrophy, a non-inflammatory overgrowth of the intimal structures to compensate for the weakening of the media. Klotz has demonstrated a marked thickening and condensation in the structures in the adventitia to assist the intima in an effort to prevent a "blow out." Adami explains this hypertrophy in another way. He terms it "strain hypertrophy," because there is an additional strain on that part of the intima directly over the lesion in the media, and a constant effort on the part of the tissues of the intima to withstand this strain results in hypertrophy. If, however, the strain becomes too severe or comes on too suddenly, not hypertrophy, but stretching, with atrophy results, and the structures give way. Carrel has proved conclusively that such a protective hypertrophy does occur. He implanted a section of the jugular vein into the carotid of a dog. Circulation was reestablished after suture and at first a bulging or dilatation of the venous portion occurred, which gradually grew less and after a while the vessel wall was no longer weak, but showed such marked hypertrophy of its coats, that after death it was actually thicker than that of the artery which it replaced. We cannot take time to consider in detail the other causes for arteriosclerosis in the larger vessels, but actual study and experiment has shown, that no matter what the cause, the effect is practically the same in all of the other conditions, so that the description of syphilitic processes will answer for all.

Now just a few words in reference to arteriosclerosis of the smaller vessels, those of the periphery, brain and heart. This is sometimes spoken of as the systemic or senile type. Here again, the media is the coat primarily involved and shows the greatest changes.

This type of arteriosclerosis has been the subject of much study in recent years and the excellent papers of Jores, Moenckeberg, Aschoff, Klotz, Foster and others, have done much toward enlightening us on this very important phase of arteriosclerosis. These workers, after much effort and careful study, arrived at the same conclusions, although work-

ing independently. Moenkeberg studied the media carefully and found in every case that this part of the vessel wall was the starting point of the arteriosclerotic process and that fatty degeneration of muscle fibers was followed by calcification. This is sometimes spoken of as the "Moenkeberg type."

Aschoff studied the normal aorta from infancy to old age and describes clearly the changes occurring in its walls. He finds that in infancy the elastic laminae stand out sharply defined and well separated from each other by the well-developed muscular layers of the media. From early childhood on there is noted a slowly progressive increase in the elastic elements of the media. The progressive increase reaches its maximum at about the thirty-fifth year and remains practically stationary until fifty, when a slowly progressive atrophy of the elastica occurs. The media becomes obviously thinner and presumably weaker.

Klotz working independently, has come to the same conclusion. He noted in addition that after thirty-five, the muscle fibers showed fatty changes, which become very marked at fifty. Now, one or both of two processes may occur. The fatty degeneration may give way to calcareous infiltration, fine calcareous granules appearing in the course of muscle fibers (a sure sign of necrosis of these fibers). Or the fibers may undergo absorption and be replaced by connective tissue. Frequently both processes may be observed in one specimen. What is the result of the calcareous infiltration of the muscle fibers and the degeneration of the elastics in the media? The vessel wall becomes thin as a result of the atrophy of some of its elements, and rigid as a result of calcification. It loses its elasticity, stretches as a result, and finally becomes tortuous. This is senile arteriosclerosis. The calcareous infiltration is not equally distributed along the course of the vessel, so that it becomes nodular; the intima shows depressions over these areas, due to atrophy of the media.

Experimentally, we are able to produce lesions in animals by the administration of certain drugs which increase blood-pressure. Adrenalin, barium chlorid and nicotin have been used for this purpose. The first two act by increasing blood-pressure. The last by causing degeneration. We are able to cause arterial changes by purely mechanical means, as shown by Klotz, who suspended healthy rabbits by the hind legs for a certain period daily, and by continuing this procedure for months, was able to demonstrate arteriosclerosis in the upper part of the aorta, carotids and cerebral vessels, while none occurred in the abdominal vessels or the hind extremities.

The same results can be obtained by periodic digital compression of the abdominal aorta in rabbits as has been shown by several observers. Clifford-Allbutt long ago pointed out that increased blood-pressure (hyperpiesis) was a very active factor in the production of arterial disease in man, and shows that certain individuals, habitually exposed to conditions favorable to increased blood-pressure, grow prematurely old. We have seen that the *intimal thickening* is perhaps the most constant feature in all types of arteriosclerosis, and this leads us to the considera-

tion of this type, in which the intimal thickening may be out of all proportion to the changes in the media and narrow the lumen of the vessel to such an extent as to cause its obliteration entirely. This is the most important single factor in the disease and is responsible for more symptoms than all the other changes combined. It may be limited to the terminal branch of a single vessel only or may involve a larger branch shutting off the blood-supply to a large area. It may involve the coronary vessels, cerebral vessels or the central artery of the retina. The cause of intimal thickening has already been discussed as expounded by Thoma and Adami, in relation to compensatory hypertrophy. Kaufman says that endarteritis obliterans may be an event of greatest importance in the usual course of arteriosclerosis. It is due to the presence of some irritant substance in the circulating blood-stream, or carried there by the vasa vasorum of the media, which come directly in contact with the intima as a result of the destructive lesions in the media. George Johnson describes changes in the media in cases which had been associated with high arterial tension during life. He describes certain types in which hypertrophy of the media was a prominent feature involving especially the muscle fibers. Savill has found similar cases in his studies. This type of arteriosclerosis has an important bearing on the cardiac changes occurring in this disease, as a thickened hypertrophied wall with an increase in the muscular elements means increased contractibility and increased resistance, the hypertonus of Russell, and cause marked ventricular hypertrophy. Another very important factor in the production of cardiac hypertrophy in arteriosclerosis is the obliteration of the capillary field. This shows its effects most markedly in senile types, where we find the atrophic glassy skin, with almost complete absence of the panniculus. There is much more to say about the pathology, but time forbids.

Symptoms.—You as practitioners, no doubt, will be more interested in this part of the subject, and I shall endeavor to present it in the most concise and practical manner. Osler, in a recent article, says, "Arteriosclerosis disturbs functions in three ways: (1) Following progressive arteriosclerosis the activity of an organ lessens and there is a gradual reduction in its capacity for work. The changes of senility are largely vascular. With a reduced blood-supply, the organs become less and less active; atrophy slowly but progressively comes on, and they become firmer and harder. In old age every organ and tissue in the body shows changes which may be attributed to progressive arteriosclerosis. (2) When the arteriosclerosis reaches a final and obliterative stage, if in an end-vessel, necrosis follows in the territory supplied, or if, as so often happens, it is a peripheral vessel of the foot or hand, gangrene supervenes. (3) Arteriosclerosis renders the small artery more prone to spasm than normal vessels. The process may sometimes be studied in the vessels of the leg. The spasm is accompanied by pain, ischemia and loss of function." (This has been called intermittent claudication.) This tendency to spasm is a very important feature of the condition under consideration and we have all had experience with it, although only too

often, have not been able to interpret the phenomena resulting therefrom. It is not necessarily accompanied by arteriosclerosis, as the occurrence in Raynaud's disease and angioneurotic edema shows. These so-called functional spasms may occur in any group of vessels, not only in the limbs, but in the brain, resulting in transient aphasia, mono- or paraplegic attacks, due to temporary loss of function, in consequence of vascular (arterial) spasm. Pal has described this condition in relation to advanced arteriosclerosis in a monograph on "Vascular Crises." In so widespread a disease the clinical features will depend on the extent to which the process has involved the arterics of the different organs. Extreme grades may be entirely compatible with good health. We all meet patients with well-developed arterial disease who are able to perform the ordinary duties of life without discomfort. Sudden death may be the first and only manifestation. Cerebral apoplexy, ruptured aneurysm, thrombosis of the coronary vessels, acute dilatation of the heart, may cause sudden death in an individual, in whom there was no suspicion of vascular disease. The symptoms are as varied as the organs involved; in one case there is evidence of a cerebral disease; in another the renal symptoms are most prominent; again, the symptoms of some bronchial or pulmonary trouble may be in the foreground, or the patient seeks relief for his asthmatic attacks.

Before entering into the discussion of the special features it may be well to consider arteriosclerosis as a *general disease*. The clinical history varies according to the organ which suffers most or is first affected. There is in some cases a history of altered metabolism, a deficient blood-supply, a feeling of malaise and an indisposition to perform the ordinary duties of life. This is associated with increased peripheral resistance, increased functional activities of the heart and increased pressure in the vessels, but not necessarily with discoverable changes in the arterial walls. The toxemia may produce headache, morning fatigue, coldness of the extremities, noises in the ears, migraine-like neuralgic attacks, which, together with the heightened blood-pressure and accentuated second heart sound in the aortic region occurring in a man of middle age, who lives well, should always suggest the premonitory symptoms of arteriosclerosis. Huehard, Traube and others have suggested that this is the prodromal stage of arteriosclerosis and much can be done in the way of prophylaxis and treatment if recognized before marked organic changes have occurred.

The patient may come to us with marked symptoms of neurasthenia, as palpitation of the heart, vague muscular pains, insomnia, lack of concentration, mental depression, confusion of ideas and general nervousness. There may be no suggestion of arteriosclerosis in the soft arteries, but blood-pressure will be found above the normal. Or the patient may suffer from polyuria, necessitating one or two urinations during the night. If we are able to correctly interpret these symptoms, we can do much to make the patient comfortable and at least delay the advance of this disease.

After marked arterial changes have occurred and the peripheral vessels are hard, high blood-pressure obtains, an increase in the cardiac impulse, the apex beat dislocated outward and very forceful, the area of cardiac dulness perceptibly increased and prolongation of the first, associated with an accentuated second heart sound, in a robust man past middle life, the condition is self-evident and should be easily recognized. Such a patient may suffer no inconvenience so long as he follows his regular vocation and is not subjected to any unusual physical or mental strain. When such a person presents himself for examination, it is well not to paint the picture too gloomy and give a too unfavorable prognosis. The man may never have given his physical condition a thought and it is best to give him a gentle warning and gradually persuade him to slow up a bit. As Osler says, "A man who has been racing like the *Lusitania* and in constant hazard of a breakdown, may be able to keep up indefinitely when the pace is reduced to ten knots an hour." A gradual loss of intellectual and body vigor is the most striking symptom, when the danger point approaches. Often the florid countenance gives way to a flabby anemic condition. The hair turns prematurely gray. The arcus senilis becomes prominent and vision is less acute. Examination of the urine shows it to be increased in amount, of low, or normal specific gravity, containing perhaps only a trace of albumin and an occasional cast. The patient is conscious of his heart beat, especially at night during his sleepless periods, and he begins to feel there is something wrong. These are the prominent symptoms of generalized arterial disease. We will now take up the special features, with reference to individual organs.

Cardiac.—The cardiac group will be considered first, because of the very intimate relationship of the cardiovascular system. There are three important groups of cases in which the dormant symptoms of arteriosclerosis arise from cardiac disease; the valvular, the myocardial and the coronary. In the course of arteriosclerosis of the aorta, the aortic disease extends downward and the same process is found to involve the cusps of the aortic valves, causing insufficiency, stenosis, or both. The mitral valve may also share the degenerative process. A large percentage of all the aortic valve lesions are due to this arteriosclerotic process, especially in men over forty.

As the valve segments are approached by the atheromatous process, the opening of the coronary vessels may be encroached on and a partial obliteration may occur. This, in addition to the general arteriosclerotic process, renders the coronary vessels liable to attacks in two ways. The partial obliteration of the mouths of the vessels allows less blood to flow through them and causes myocardial degeneration and weakness of the heart muscle. Arteriosclerotic disease of the branches of the coronaries may lead to thrombosis, anemic infarcts or sudden death. In this type angina pectoris is a frequent symptom. Rupture of the heart muscle has occurred under these conditions.

Myocardial changes occur in all cases of arteriosclerosis. There may be only hypertrophy of the ventricles with accentuation of the second aortic sound and a thudding prolongation of the first sound at the apex.

It is impossible to describe the clinical symptoms of the myocardial group with any degree of accuracy. This may be readily understood when we appreciate the manifold functions of the cardiac musculature. The first symptom noticed by the patient is the loss of the reserve power of his heart muscle. He lacks wind. He notices palpitation on slight exertion, a dry cough, or perhaps mild asthmatic attacks, or anginal attacks at night. He may be able to continue his regular work, but feels a gradual falling off of his endurance. As McKenzie says, "His cardiac response is diminished, until finally he is compelled to seek medical advice." There may be a slight arrhythmia, an extra systole or gallop rhythm. There may be increased frequency or marked slowing of the beat. Dyspnea is an early and marked feature, and as cardiac incompetency supervenes, we have all the symptoms of acute dilatation, orthopnea, edema of the feet, cough with perhaps a blood-tinged serous expectoration and evidences of pulmonary edema. The urine is scanty, highly colored and may contain albumin. With judicious treatment, rest in bed for a week or more, the patient recovers and may be able to continue his work again. Many such attacks may follow before the patient finally succumbs. Some patients present the syndrome of Stokes-Adams disease.

Renal.—There may be no renal disturbances aside from polyuria, or there may be an associated nephritis, a secondarily contracted kidney, as in gout or lead poisoning. The urine in this type would enable us to differentiate it from the simple arteriosclerotic kidney, in which there are no marked or characteristic changes found until late.

Cerebral or Nervous Symptoms.—As already mentioned, the patients may present all the symptoms of neurasthenia. Headache is an early and distressing symptom and is frequently of the frontal type. It is often continuous, but may be of the paroxysmal or migraine type. Vertigo, transient giddiness is a frequent and at times a distressing symptom, and may be associated with tinnitus; often is brought on by exertion or may come on with a sudden movement. It may be accompanied by a vascular crisis and the patient falls down as in a faint, but does not lose consciousness.

We frequently have transient monoplegias, lasting from a few minutes to a day or two, with complete recovery. On account of the vascular distribution, hemiplegia is not frequent, unless due to organic lesions as hemorrhage or thrombosis. Convulsions, epileptiform in character, may occur. They are associated with high arterial tension, frequently preceded by headache and giddiness.

Progressive dementia, gradual failure of the mental power, is one of the symptoms of arterial sclerosis of the cerebral vessels. A man begins to lose interest in his work, is careless and apathetic; memory and judgment are poor; facial expression changes, becoming dull, and finally the psychical powers are so reduced that the patient is in a state of dementia. This is a common picture in the presenile stage of men over sixty. There may be mental excitement and delusions of all sorts. Rupture of cerebral vessels leading to apoplexy is a frequent occurrence. Thrombosis is not so common in the senile as in the syphilitic type. Spinal cord symptoms

also occur in arteriosclerosis of the cord, resulting in both motor and sensory disturbance. Dejerine and Grassit have described a syndrome due to the intermittent contraction in the spinal cord, closely resembling the symptoms caused by intermittent contractions of the vessels of the lower extremities.

Abdominal.—Pal and others believe that many of the painful gastric and abdominal symptoms are associated with spasm in the gastric and mesenteric vessels. Ulcer of the stomach has been met with in connection with endarteritis of the small arteries of the stomach. So much has been written of late in reference to arteriosclerotic symptoms in the abdomen that one becomes somewhat skeptical and awaits further proof before drawing final conclusions.

Peripheral Vessels.—Muscular cramps frequently follow over-exertion or remaining in a strained position for some time. Runners frequently have cramps in their legs involving whole groups of muscles. These types of cramps, or tetanus, are of no great significance, as they may occur in the young and old alike, but the nocturnal cramps in the elderly individual is usually associated with arterial disease. In connection with endarteritis obliterans of the vessels of the legs, numbness and tingling, burning or shooting pains are frequently felt. In diabetic and senile gangrene, similar neurotic pains have been experienced before any evidence of gangrene was visible. Intermittent claudication is due to arteriospasm in the vessels of the lower extremity and is almost always associated with arteriosclerosis in these vessels.

Special Senses.—There may be a transient blindness due to arteriospasm. Thrombosis of the central artery may occur. Deafness is not frequently the result of arteriosclerosis, but deficient hearing is not at all infrequent. The tinnitus and other head symptoms have already been mentioned.

Diagnosis.—The diagnosis of arterial disease is usually an easy matter, if we have in mind the essential features of the disease and take pains in eliciting a careful sequential history in every case. We must remember that the disease is not uniformly distributed in the body and that a soft radial artery does not exclude the disease in the other vessels. The converse is also true, because we may have marked changes in the peripheral vessels, and the deeper structures be free. The vessels of the head, the coronary vessels and those of the kidney may show an advanced stage of degeneration without palpable changes in the radials.

The general appearance of a patient is deceptive in many cases, as a man in the prime of life may have an advanced degeneration of his arteries. The gray hair, the arcus senilis are often deceptive and frequently occur in young healthy individuals.

The essential features in arteriosclerosis are as follows:

1. Thickening of the peripheral vessels in general.
2. Signs of the hypertrophy of the left ventricle, shown by dislocation of apex beat outward, a thudding first sound and a loud second aortic.
3. Increased blood-pressure.
4. Slight and variable amount of albumin in the urine.

These, when associated with other characteristic symptoms of the disease, usually make the diagnosis clear. Examination of the retinal arteries is usually a very reliable test. Arteriosclerosis can be demonstrated early by a careful examination of the eye-ground. The pulse tracings frequently help us out.

Prognosis.—Once the disease is present in an advanced form, it is beyond repair. We must take into consideration all of the factors and weigh carefully all the evidence before venturing a prognosis. The heart, kidneys, state of nutrition, previous habits and future care, all enter into the picture, when the future outcome is concerned.

Treatment.—General treatment. The patient should be urged to live a peaceful life, free from worry and care, if possible. A long vacation is most helpful in some cases, but a man should not be urged to give up all work, unless his condition makes it advisable. If there is cardiac dilatation or mental disturbance, rest is imperative. The patients need encouragement and advice more than medicine; pleasant exercises should be encouraged. Albutt and McKenzie advise hill climbing for certain types, as the exercise relaxes the peripheral vessels, if not too severe. The skin must be kept active by warm baths and a good rub. Massage and passive movements are beneficial in some cases. The CO₂ bath has been highly recommended by certain writers, especially those of the German schools.

Diet should be reduced to a minimum in every case with high blood-pressure. Most patients past forty eat too much and are surprised to learn that they can get along with one-third the amount and feel better for it. Eggs in moderation, milk, butter-milk and other milk products are all allowable in moderation. Rice and other starchy foods are permissible. The patient can get along without any meat and will soon become a vegetarian. Spirits should be restricted; smoking reduced to a minimum.

Medicinal treatment. We have no remedy for this disease although the iodids are used extensively. It has been said that experimental arteriosclerosis may be prevented by the administration of potassium or sodium iodid. In the syphilitic type it should be used freely, and in the cerebral forms be pushed to the limit. I have given two drams every three hours in these cases with excellent results. In the other types it may be given in 10- to 15-grain doses, three to four times daily. Gouget and other French writers advise a mixture of sodium and potassium salts; the sodium salt being used to reduce arterial tension and the potassium for its resolving powers. Where extreme arterial tension obtains, the nitrites may be used, but we must bear in mind that their action is transitory. For the arterial spasm, amyl nitrite may be inhaled in 5-minim doses, quickly repeated if not effective. Nitroglycerin in 0.01-grain doses may be given three or four times daily for its vasodilator effect. Erythrol tetranitrate in 0.5-grain doses is valuable, and its action more lasting than the other nitrites. The salts of sodium or potassium may be used in from 0.5 to 5-grain doses.

The preparations of opium are necessary in some cases, especially those suffering from angina pectoris and the vascular crises.

When myocardial degeneration becomes extreme and gives us the signs of dilatation, then digitalis or one of the allied remedies should be employed. When there is a tendency to thrombosis the iodids or citrates should be given.

We must always bear in mind that we are dealing with an incurable disease and that we must direct our efforts more to the treatment of the patient than to the arteriosclerosis.

The various solutions and sera which have been so highly recommended are all practically useless. Venesection must be resorted to when the blood-pressure is too high and apoplexy threatened. The renal types must be treated along rational lines, eliminating freely by the bowels and skin and protect the kidney. Common sense, good judgment and a cheerful optimism are essential factors.

7 West Madison Street.

ONE CASE OF ASCITES WITH DIFFERENTIAL DIAGNOSIS *

ROBERT H. SMITH, M.D.
SEATON, ILL.

A lady, aged 39 years, began to complain of weakness and enlargement of the abdomen, about five weeks previous to the time I saw her. She was taken to the hospital, the abdomen tapped and five pints of medium dark-colored fluid drawn off. Her case was pronounced cirrhosis of the liver, and she was sent home to die.

I saw her the 19th; she had been sick about three weeks. Began with diarrhea, some cramping in the limbs, and was very thirsty. No pain to amount to anything. Has developed a cough within the last three or four days which is very aggravating. She gave history of an injury to the left side about two years ago, and has suffered more or less pain ever since. Has had considerable gall-bladder pain lasting over a period of one and a half years, but that has improved very much under the influence of urotropin. Physical examination: heart and lungs negative, heart normal in size, no murmurs. Blood-pressure 135, mm., Hg. Urine negative; some tenderness over gall-bladder and stomach; no pus. Liver slightly enlarged, tongue coated. Fluid present in abdomen, but no general tenderness.

Examination of blood: reds, 3,864,000; leukocytes, first 16,400, polynuclear neutrophils 92 per cent., small monos. 4 per cent., large monos. 3 per cent. Hemoglobin 85 per cent. Temperature 100.4; pulse 120. She has had no chill. In the morning her temperature is normal and begins to rise about 4 p. m., and usually reaches 100 and back to normal by 11 o'clock, followed by considerable sweating.

* Read at the meeting of the Warren County Medical Society, April 4, 1913.

When a patient presents with ascites as a leading symptom, we immediately think of the things that cause this symptom, and try to differentiate. The ordinary causes of ascites are cirrhosis of the liver, cardiac insufficiency, renal insufficiency, tubercular peritonitis, anemia, solid ovarian tumor or cyst, carcinoma which involves the peritoneum. The examination would immediately rule out renal and cardiac insufficiency; likewise ovarian cyst or fibroid was easy to dispose of. Examination of the blood ruled out the question of anemia as well as the malarial origin for the intermittent course of temperature; we get a low leukocyte count in malaria and the plasmodium are seen in the stained specimen, that leaves cirrhosis of the liver, tubercular peritonitis and cancer involving the peritoneum.

In cirrhosis of the liver you may have temperature similar to the one in this case, as well as a well-marked leukocytosis, and it is very difficult to rule it out. In this case, you would expect to find evidence of hepatic engorgement, viz., enlarged veins in the epigastrium and around the umbilicus, which are not present in this case; also an enlarged heart, and an increase in the blood-pressure, which are absent, and would almost rule cirrhosis out, but nevertheless one should keep it in mind.

Tubercular peritonitis was my first guess in this case, but the high leukocyte count would go against tubercular peritonitis, especially in the absence of other tubercular processes, and again tubercular peritonitis is rather rare at this age, being more common in earlier life, while cancer is much more common at this age, still the leukocyte count would not rule out tubercular peritonitis, as the high count might be due to a complication of gall-bladder infection, of which we have considerable evidence. The tuberculin reaction is of diagnostic value only as negative evidence, it being present in practically every one at this age. So while we cannot positively rule out tubercular peritonitis, it is hardly likely, in the face of negative evidence of tuberculosis being present in other parts of the body.

We still have cancer (probably of the stomach) involving the peritoneum to account for. We may have both temperature and a high leukocyte count in a large proportion of cancers. The high percentage, 92 per cent. polymorphonuclear neutrophils, indicates a very severe toxemia of some kind, and some authorities say when the proportion gets that high it indicates an approaching calamity. Cancer would explain very nicely all the laboratory findings, but we do not have the physical findings to back it up or enough evidence to make a diagnosis of cancer.

I saw her again the 20th, condition remained the same as the day previous. I gave her a test meal, and in one hour drew off the contents, which showed a total absence of acids. She had never complained of stomach trouble and has had a good appetite, no nausea or vomiting at any time.

Leukocyte count 16,400, temperature 99.2, pulse 108. She was put on urotropin and dilute hydrochloric acid, and gradually began to improve. The ascites was gradually leaving the abdomen and by the 24th, with absolute rest in bed, her temperature was slowly coming down to normal.

Another analysis of stomach contents was done with the same result.

I think with the increased data of total lack of hydrochloric acid the evidence turns toward carcinoma. It is the only thing that will explain all the evidence at hand without hedging. So, accordingly, a diagnosis of carcinoma of the stomach involving the peritoneum was made.

I saw her on the morning of the 25th, and her temperature was 98.4, pulse 96; she was feeling fine and in good spirits, and wanted to get up. During the afternoon of the same day her mother had her get up and lie on the couch in the adjoining room while she made her bed. A few minutes later she went to her and she was dead. An autopsy was done that evening and a large carcinoma of the great curvature of the stomach was found. It involved the liver and peritoneum, large nodules being present in the great omentum. There was present a general fibrinous peritonitis probably toxic in origin, the intestines were matted together by adhesions, and the gall-bladder was completely filled with gall-stones.

CASE 2.—Male, aged 22 years, had always been well until three years ago, was sick with what was called typhoid fever for eleven weeks, when it located in the left kidney and he was operated on with the expectation of finding pus. When they opened the abdomen all they found was bloody serum. Has been well until present time, when he is complaining of his kidneys bothering him. Pain in the region of left kidney, frequent urination, which burns him some. His temperature is 101, pulse 96, bowels constipated. Physical examination: patient well developed and well nourished, but slightly anemic. Heart and lungs negative, left side of abdomen dull on percussion almost to the meridian line and a mass was felt which filled up the whole left side, and was tender on palpation; right side normal. A blood sample was taken, also a sample of urine, which showed a large quantity of pus. Leukocyte count 6,600.

At first glance this case looked very simple; one would say almost immediately an infected kidney, which he in all probability has, but that is not all there is to the case. What is the nature of the infection? Is it a colon infection or tubercular? We usually have a high leukocyte count in infection of the colon type, while a low count would be perfectly consistent with a tubercular infection. A bottle-test was done, and it showed that the pus came from the kidney instead of the bladder. In my mind we have a renal infection, the infecting agent yet to be determined. We often get a large mass in the side due to a renal infection, but this mass being so large one would immediately ask, is this due to an enlarged kidney? With such a history, you would think of a previous hydronephrosis, and that would explain the large mass very nicely in this case, but the question still remains as to the identity of this mass, as it is very possible that it might be an enlarged spleen. The colon was inflated with air. In case of an enlarged kidney, the colon lies anterior to the kidney, and you get the tympanitic sound on percussion, while with the spleen the colon lies posterior and you would still get your dullness. In this case it proved to be the spleen. This finding complicates matters materially. Fortunately, I took some slides, and on examining a stained specimen, was immediately struck with the unusual appearance of the

leukocytes, especially the large number of very large mononuclear neutrophils; a differential leukocyte count was done, the result being polynuclear 46.8 per cent., myelocytes 46.8, small mononuclear 6 per cent.; a few of the myelocytes were eosinophylic, while a large majority were neutrophylic. The myelocytes are always foreigners to the blood and indicate an irritation of the blood-making organs. The examination of the blood clears things up wonderfully. One begins to see the cause of his previous sickness of eleven weeks.

Typhoid fever in a patient's history should always be viewed with suspicion, as experience shows that it may mean almost anything, especially when the case runs an unusually long or short course. Osler says that we often get a hemorrhagic exudate in the pleura or peritoneum in myelogenous leukemia, so this would explain the bloody serum that was obtained on operation as well as the temperature. Yet one would say, could this be leukemia with such a low leukocyte count? In Cabot's series the average was 430,000 per c.mm., the highest being 1,072,000, the lowest 98,000 per c.mm. In Osler's series the whites averaged 298,200 per c.mm., but in making a diagnosis of myelogenous leukemia one does not think entirely of the large numbers but the proportion. Cabot says that the blood of myelogenous leukemia is absolutely peculiar and characteristic, and that the myelocytes are the chief point of interest, the average being 35 to 36 per cent.; the highest was 55 per cent., while the lowest was 20 per cent. He also states that during a remission or under treatment the leukocyte count may fall to normal, but the myelocytes remain high and the diagnosis could thus be made, even if the case was seen for the first time. He has observed this in two cases.

Gailor and Thayer have had the same experience, and at such times when there is no increase in the leukocyte count one would never suspect leukemia, unless a different count was done. In my mind there is no question that this boy has a case of myelogenous leukemia in addition to his renal infection, and I just happened to find it during one of the remissions which are so peculiar to this disease.

Prognosis.—Osler says that recovery occasionally occurs, but that a great majority of cases prove fatal within three years, and that remarkable variations were displayed during the course of the disease. He has recently seen a case which was first diagnosed ten years ago.

Treatment.—Fresh air, good diet and abstinence from mental worry are important. Arsenic in large doses seems to be the best remedy. X-ray gives results in some cases, and excision has been performed forty-three times with five recoveries (J. C. Warren).

Of late the benzole treatment of leukemia has given some very striking results. A recent article by F. H. Billings in *The Journal A. M. A.*, gives the results of five cases so treated. Practically everything has been tried on these cases without results, but under the influence of benzole the blood went to normal, and the enlarged spleen and myelocytes disappeared in each case.

Other men of equal standing report good results from the benzole treatment.

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JUNE, 1913

THE PEORIA MEETING OF 1913

THE TIME, THE PLACE, THE WEATHER

The Illinois State Medical Society convened for its sixty-third anniversary session at the beautiful city on the Illinois River and Peoria Lake, May 20, 1913. This was the sixth meeting held at Peoria, the first being in 1851, the second in 1871. A reproduction of a photograph taken on this occasion and printed in the May supplement shows about one hundred and twenty-five practitioners arrayed in plug hats and bushy whiskers, the wives and sweethearts in hoop-skirts and parasols. The third in 1883, the fourth in 1901 and the fifth in 1908. Peoria remains the second city in the state and gives every evidence of a steady and healthy growth. The local profession had studied out all the details for the successful conduct of the convention and entertainment, and much credit is due to the committee for the arduous work so well accomplished.

Unfortunately, the weather was exceptionally cold for the third week in May, and although commanded to by the weather Bureau, the moon refused to shine on the river excursion. Many had failed to bring over-

coats and were, therefore, deprived of attending this delightful function. Those on board enjoyed the good fellowship of dancing, and singing led by the doctors' double quartette, and the substantial lunch. The Shriners Temple was without heat and somewhat uncomfortable. The auditorium was so very large and so full of echoes that only those speakers who were possessed of trained voices could make themselves heard. The committee were well aware of the deficiencies or rather the superfluities of the temple, but were unable to secure the neighboring church auditorium which was so well adapted for meeting purposes. We mention the meeting place only to warn future committees of the danger of having too large rooms. A small room, although crowded, is better than a very large room where the visitors cannot hear. There was some crowding in the hotels. This is, of course, unavoidable, and members must expect it when they fail to engage quarters before the meeting. About 900 attended. The hotel manager spoke well of his guests. One of the most impressive parts of the annual meeting was the presentation of a solid silver tea set to Dr. Harold N. Moyer, Chairman of the Medico-Legal Committee. Dr. Moyer has done so much for so many years for the members of the State Society that all were interested in giving some expression of appreciation. The committee, of which Dr. J. H. Stealy was chairman, had purchased a beautiful gift which was presented Wednesday afternoon. Dr. Moyer responded in one of his characteristic addresses which had a touch of pathos and humor appropriate to the occasion. He stated that he had been canvassing the society for a successor and in all probability this year marks the close of his connection with this feature of society work.

THE SCIENTIFIC PROGRAM

The program was excellent. The recently organized sections—Public Health and Hygiene and Eye, Ear, Nose and Throat—held successful sessions, and the Secretaries' Conference was as usual a great success.

Dr. Rock Sleyster of Waupun, Wis., was there with his "Booster Sermon" to the great edification of his audience. The Louisiana Health Car gave an excellent exhibition which was visited by a large number. The great treat of the meeting was the exhibition of motion pictures illustrating various nervous and mental disorders, and the microscopic activity of several disease organisms like the trypanosoma and spirochaete. Nothing of the sort had ever been obtainable before, and many of the pictures were shown for the first time at this meeting. Professor Weisenburg of Philadelphia is the author of this "living book," and certainly deserves the greatest praise for his enterprise. We hope that an exhibition of this character may be given at the next annual meeting and would suggest that the whole of Wednesday evening next year be given to "the movies." They are genuine entertainment. A large proportion of general practitioners are weak on nervous diseases, and these pictures "put them wise." To Dr. C. E. Black, Chairman of the Council, is due the credit of securing the attendance of Dr. Weisenburg.

The oration in medicine was a treat, being devoted to "The Salvarsan Treatment of Advanced Nervous Disease," read by Dr. Joseph Collins

of New York City. The oration in surgery by Dr. Charles L. Scudder of Boston, was on "Stenosis of the Pylorus in Infancy." This superb production was read Thursday afternoon to not more than 150 persons. Here is a great cause for complaint which we have before voiced. Actually not more than ten hours is given to the scientific program during the meeting of the Illinois State Medical Society. That is Wednesday morning and afternoon, and Thursday morning. About noontime, Thursday, members begin to run for their trains, and by 2 p. m. there is an array of empty benches. Our distinguished visitors justly complain of this shabby treatment, and we fear that the day will soon come when they will refuse to take the time to appear before this evaporating membership. Brethren, let us either have a shorter program or stay through the longer one. The last papers of Thursday afternoon were heard by less than twenty-five persons. Let each of us ask himself whether an extra twenty-four hours devoted to hearing scientific papers or seeing demonstrations is not worth more to ourselves and clientele than the possible loss of a patient or two.

THE ELECTION AND REVOLUTION

The most remarkable event of the meeting was the political revolution which was staged. We have been familiar with the history of the society for nearly thirty years and can testify that never has there been before such a state of affairs. It will not be amiss to review a little in order to give a better understanding of what it was and how it happened. For many years until 1903 the membership of the Society was quite limited and organized on strictly scientific and ethical lines. A society of gentlemen spent all the days in scientific discussion and social conversation. When these gentlemen assembled, the homes of the best citizens were opened, and social affairs of great brilliancy and formality marked the evenings. Membership involved money, time and sacrifice. There were no plums to be distributed. After three days the membership dispersed and no officer, the secretary excepted, did anything until the next year. But time has brought changes. The JOURNAL was established, the doors were thrown wide open to increase the membership. From a membership of 500, the number rapidly increased to 3,000 — 4,000 — 5,000 — and now it is 6,000. The revenues and the officers increased with the numbers. The councilors were clothed with great power and meet at least quarterly. The Chicago Medical Society now alone numbers more than 2,000. Many of them never attend the meetings, but their votes are to be had by ambitious politicians. Out in the state are also to be found ambitious men who are only too eager to combine with the solid delegation from Chicago. The new members not trained in society ideals were not slow to upset the old standards. To show that present conditions have long been anticipated we quote from our editorial of June, 1902, found on page 30, Volume 4:

ENLARGED MEMBERSHIP MEANS INCREASED RESPONSIBILITIES

For nearly fifty years the Illinois State Medical Society pursued the even tenor of its way in a manner common to state medical societies the country over. The membership represented about 5 per cent. of the practitioners of the state and

when 200 of them got together at an annual meeting it was held to show a remarkable interest on the part of the profession. At these sessions lasting about two days, papers obtained after much solicitation were read, the officers were elected and all save the permanent secretary lapsed, as far as society activity was concerned, into a state of hibernation. The permanent secretary by dint of much arduous labor in prodding up the readers of papers managed to get out the bound volume of the transactions about six months after the meeting. The members by this time had probably lost interest in the subjects discussed and filed the volumes away in stately array on the library shelf. The society was but an incident in professional life. However, this plan of procedure had its compensations which should not be forgotten now that a change is in progress. The society was a club of gentlemen. Politics and political methods were but little known at the meetings. Men were called to the offices. Self-seeking politicians had no place. The membership and attendance were so small that each person had opportunity for intimate acquaintance with his fellows. About the close of the last century when everything viable in America began to show symptoms of expansion the society became inoculated with the prevailing disease and resolved to become a real factor in the professional, political and commercial life of the state. THE JOURNAL was established and the membership expanded by leaps and bounds. Too many papers were offered for the annual convocation, requiring the division of the scientific program into two sections. The crisis was reached at Quincy last week when the entire membership of ninety local societies became members of the greater Illinois State Medical Society.

Only those who have been in close touch with the work of the society in the last decade can appreciate the full significance of this event. To harmonize the conflicting interests of nearly 4,000 practitioners scattered over the state, some in hamlets of a few hundred inhabitants and a large proportion in a metropolis of two millions, is no small task. To shut out political wire pullers and keep down political fence building among these thousands will require no little ingenuity. To let the office always seek the man and frown down the office seekers demands self-restraint on the part of the ambitious. We sincerely hope that no abuses will creep in to mar that harmony which has always been our greatest strength. We plead that conservatism may not be cast aside and that haste may be made slowly, always trying all things well and holding fast to that which is good. Let us then not cut loose from our old moorings too hastily but let us on larger foundations, just as strong as of old, build our new structures safely, carefully and happily. If this be done the new society will not only be the largest, but the most harmonious and influential state medical organization in the Union.

From time to time, and especially at the Danville meeting in 1910, and since, it has been evident that a ground swell has been moving in the Society. This was largely due to previous changes in the Chicago Medical Society. What these metropolitan changes were and what caused them, we cannot discuss now. Those who were present at the Danville session had revealed to them the determined and desperate character of the contest. This was emphasized at Aurora and at Springfield, when one of the highest grade men was defeated for the office of treasurer, which he had filled for thirteen years with benefit to the Society and credit to himself. Previous to the last meeting, word had been sent out from Chicago that certain officers of the State Society were to be made to walk the plank. The prophecy of the editorial of 1902 had come true. "The old guard dies but never surrenders." They were men who had given many years and many thoughts to the cause of professional organization. They had been honored by their brethren for their devotion. We believe we speak for every one of them when we say that personally they have

no regrets for the work done. Possibly they will be stronger in defeat than in victory. At any rate a high standard has been set which should be maintained. We hope their successors will emulate their virtues and avoid their faults.

Among the men who have relinquished office in the past twelve months in chronological order are:

1. J. W. Pettit, Ottawa, President 1909, Member Council from 1903 to 1912, Member Legislative Committee.
2. M. L. Harris, Chicago, President 1903, Member of Council from 1903 to 1912.
3. E. J. Brown, Decatur, Treasurer 1899 to 1912.
4. W. K. Newcomb, Champaign, Councilor 1905 to 1911, President 1912.
5. J. F. Percy, Galesburg, Councilor from 1895 to 1913, President 1908.
6. G. N. Kreider, Springfield, Assistant Secretary 1890, Treasurer 1891 to 1900, President 1901, Editor 1901 to 1913.
7. C. E. Black, Jacksonville, Councilor from 1895 to 1913, President 1904.
8. E. W. Weis, Ottawa, Secretary 1897 to 1913.
9. Frank P. Norbury, Springfield, various chairmanships and offices from 1893 to 1913.
10. J. Whitefield Smith, Bloomington, Councilor from 1904 to 1913.
11. E. Mammen, Bloomington, Chairman Educational Committee.
12. L. H. A. Nickerson, Quincy, President 1913.

CONCLUSION

The task is done. The history is made. The Peoria meeting came to a close with the meeting of the House of Delegates Thursday morning. The Chicago delegation was in complete control. This was recognized. No contest whatever was made on the principal officers. Drs. Weis and Norbury declined to run and Dr. Black resigned the office of councilor, which he could have retained until 1915. The temper of the House was too plainly shown Tuesday when he read his report as Chairman of the Council. He could not in justice to himself remain in office. Of Dr. Black's work for the Society we need not speak. It will be more and more appreciated as the years go by. He has been a tower of strength for the best things in medicine and always a gentleman, absolutely truthful and slow to take offense. His last great work was the monumental index of the bound volume transactions issued in the first forty-nine years of the Society's existence. His mind is particularly adapted for this work and it was completed with characteristic thoroughness and comprehensiveness.

The work of Secretary Weis also deserves mention. His work had become a part of his life and it was evident pain that the plant was uprooted. He had served for sixteen years in this office, a service only equaled by the father of the A. M. A., Dr. N. S. Davis, who served the Illinois Society for an equal length of time in the same office. Dr. Weis retires with the respect of his colleagues, who very appropriately voted

him a testimonial to be presented at the next annual meeting, which will be held in Decatur.

Dr. Nickerson presided over the meeting of the House in a most acceptable manner. The irony and quiet humor of his remarks on the unusual activity of the Cook County delegates resulted in bringing all into good humor while the steam roller was being put in action. A letter from Dr. Nickerson, which we print in our correspondence columns, expresses the proper sentiment regarding the future.

The incoming president, Charles J. Whalen, whose photograph goes out with the JOURNAL this month, has been active in the councils of the Chicago and the State Society for a number of years. He has been especially effective on the Legislative Committee.

A. L. Brittin of Athens, Menard County, president-elect, was nominated and elected as a representative of the country practitioner. He has been president of the Sangamon County Society and delegate to several meetings of the American Medical Association.

E. W. Oliver of Peoria, and Dr. D. G. Smith of Elizabeth, have been effective workers in the State Society.

Dr. Gilmore of Mt. Vernon, the new secretary, is a graduate of Jefferson, 1903, and has practiced in Illinois since 1905. He has been active in the work of the Southern Illinois Medical Association for a number of years.

The officers elected were:

Officers

President, Charles J. Whalen, Chicago; President-Elect, A. L. Brittin, Athens; First Vice-President, S. M. Miller, Peoria; Second Vice-President, D. G. Smith, Elizabeth; Secretary, W. H. Gilmore, Mt. Vernon; Treasurer, A. J. Markley, Belvidere.

Councilors

Clyde D. Pence, Chicago; Frank C. Sibley, Carmi; J. H. Stealy, Freeport; J. A. Marshall, Pontiac; E. B. Cooley, Danville; August H. Arp, Moline; C. S. Nelson, Springfield; C. D. Center, Quincy; C. F. Burkhardt, Effingham.

Delegates to the American Medical Association

A. M. Harvey, A. M. Corwin, J. C. Koch. Alternate, J. W. Vander-slice, A. A. O'Neil, D. M. Ottis.

Committee on Public Policy

A. M. Harvey; O. B. Edmonson, Clinton; Chas. E. Parkes, Chicago.

Committee on Medical Legislation

L. C. Taylor, Springfield; J. H. Bacon, Peoria; J. V. Fowler, Chicago.

Committee on Medical Education

F. A. Buckmaster, Effingham.

County Secretaries' Conference

President, E. B. Owens, Dixon; Vice-President, E. W. Fiegenbaum, Edwardsville; Secretary, T. D. Cantrell, Bloomington.

Sectional Officers—Sections One and Two

Section One: Chairman, George Parker, Peoria; Secretary, C. G. Grulee, Chicago.

Section Two: Chairman, Frederick A. Besley, Chicago; Secretary, E. M. Sala, Rock Island.

Per Capita Tax, 1913, \$2.00.

Next place of meeting, Decatur, Ill.

THE BEST ARGUMENTS FOR THE VITAL
STATISTICS BILL

Whatever part of this letter is true is the best possible argument for the bill. Whatever part is false, of course, falls by its own weight.

CHICAGO, May 29, 1913.

Dear Sir:—Your attention is called to Senate Bill No. 313, which relates to the registration of births and deaths. The bill has passed the Senate and is now in the House. It directly affects the home life of every citizen of this state and will be as obnoxious as the Burial Permit Law, which the people compelled the Legislature to repeal in 1903.

The bill is objectionable to the citizen in the following particulars:

If a death occur in a family and no physician has been in attendance, before the body can be buried a registrar must make an investigation before a burial permit can be issued. Should a member of the family die suddenly or by accident, the coroner must hold an inquest. The expenses of the inquest must be charged against the estate of the deceased, if there be any.

There is so much work, in connection with the burial and registration of death, imposed upon the sexton and undertaker that the already high cost of burial undoubtedly will be materially increased.

Before a child can enter a public, private or parochial school, the parents must procure a birth certificate to be filed with the teacher. If its birth has been registered they must pay 50 cents for a certified copy of the registration.

Should there be no birth certificate, parents must obtain affidavits and give proof satisfactory to the registrar to convince him that a birth certificate should be issued.

All children at the time the act becomes a law must have a birth certificate to be admitted to the public schools; or, if under fourteen years of age, must obtain a birth certificate before an employer can give them work. In 1912 there were 1,570,867 children between the ages of 6 and 21 in Illinois. The enrollment in school in 1912 was 987,379. The great cost and trouble of putting this act into effect, therefore, may be seen from the foregoing.

This bill does not contain the uniform vital statistics table requested by the Federal Division of Vital Statistics. It marks an illegitimate child from the cradle to the grave. It practically relieves both father and mother of the obligation to support their unfortunate offspring.

The measure ought to be defeated. Will you urge your representatives to oppose it, thereby saving the home from embarrassment and children from annoyance?

Yours truly,

THE NATIONAL LEAGUE FOR MEDICAL FREEDOM,
JOSEPH C. MASON, Secretary.

ONE FOOL BORN EVERY MINUTE, SOMETIMES TWO

One calling himself Professor Dr. Hovakim B. Shekerjian, 1443 LaSalle Avenue, Chicago, a graduate of the National Medical University, Chicago, 1907, was recently investigated by a reporter of the *Chicago Tribune*. It seems that he has a brother Harouten, and another, Paul, who are interested in the advertising business conducted by Hovakim. All were boot-blacks until the "psychic power" treatment was devised by them for business purposes. A gullible public and the advertising columns of certain papers apparently have made the business extremely profitable for these enterprising gentlemen.

APPRECIATION OF INDEX

By action of the old council bound copies of the index to the Transactions of the State Society, 1850-1899, were sent to each medical library in the Union. We have received acknowledgments of these valuable documents from the library of the Surgeon-General's Office, War Department, Washington, D. C.; the Public Library of Indianapolis, Ind., which maintains a complete medical department, and the Library of the Medical maintains a complete medical department; the Library of the Medical School of Harvard University, Boston, Mass.; the Johns Hopkins Hospital, Baltimore, Md.; University of Michigan, Ann Arbor, Mich.; Academy of Medicine, Toronto, Canada, and the College of Physicians of Philadelphia, Pa.

Correspondence

EX-PRESIDENT DR. NICKERSON REMINISCES

QUINCY, ILL., June 1, 1913.

Dear Dr. Kreider — Well, the "old guard" went down in glory. They left the largest society, more money in the treasury and not the least, the best State Journal published with the largest increase the last year. We all hope there will be still the upward move. The last meeting was certainly a great meeting; may we have many more.

Yours truly,

L. H. A. NICKERSON.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY

The Adams County Medical Society met in regular monthly session at the Chamber of Commerce Rooms, Monday, May 12.

The most important matters discussed were the annual convention of the Illinois Highway Improvement Association to be held in Springfield, May 13, and the bills in the House of Representatives.

The secretary read a communication from Dr. L. C. Taylor, chairman, committee on medical legislation, which stated that the judiciary committee of the House of Representatives had recommended the passage of House Bill 229, known as the osteopathic bill. After much discussion Dr. Wells moved that this matter be referred to the legislative committee. Seconded and carried.

Dr. Christie moved that the chair get a pledge from each one present, that he would write to our senator and representative to-day. Seconded.

As an amendment Dr. Nickerson moved that those who so pledged themselves rise, and that the secretary keep a list of the names. The amendment together with the motion was voted on and carried.

As regards the annual convention of the Illinois Highway Improvement Association, it was moved if any member present felt that he could attend this convention that he be delegated to represent the society. Seconded and carried.

Since it seemed impossible for any one to go, the matter was not discussed farther.

Luncheon was enjoyed at the Hotel Quincy. The afternoon session was taken up with the scientific program. A very excellent paper on "The Treatment of Acute Articular Rheumatism," was prepared and read by Dr. L. H. A. Nickerson, president of the Illinois State Medical Society, and one of our most energetic and faithful members. The paper called forth a lively discussion on the various methods of treatment both past and present. The general concensus of opinion seemed to go against the use of phylacogen, the serum treatment, recommended by Parke, Davis and Company.

After one of the best meetings of the year the society adjourned.

CHAMPAIGN COUNTY

The Champaign County Medical Society held its regular monthly meeting Thursday, April 10. Dr. L. C. Miller presented to the society the subject of "Gall-Bladder Diseases with Special Reference to Gall-Stones and Carcinoma." Several cases of each condition clearly described and an allusion to the significance of certain forms of digestive disturbances in the diagnosis of gall-bladder trouble, made a fine illustration. In the discussion Dr. Beard referred to typhoid fever as a cause of possibly the majority of gall-bladder infections and the resulting stone formations and carcinoma, and spoke of its prevention by typhoid vaccine and of the treatment of unavoidable typhoid with hexamethylenamin to prevent the invasion of the gall-ducts.

Dr. H. W. Miller's paper on Bell's Palsy gave a complete description and a very carefully outlined course of treatment. It was indeed a strikingly clear and interesting production from the anatomy through etiology, symptomatology, treatment and prognosis. Dr. Miller carried out the unwritten rule that a new member shall as a part of his initiation present a paper to the society, and if his achievement is a sample of what the new members are able to do we have failed in the last year because of neglecting that rule to hear some vitally interesting ideas.

The society strongly indorsed a liberal appropriation by the legislature for the state university medical school and a resolution to this effect was sent to the senator and representatives from this district.

Dr. Harold Moyer's insurance proposal was disscussed and it was decided to ask our delegate to the state society to vote in favor of it.

The good roads movement was indorsed by formal resolution.

A committee, Drs. Stanley and Mason, was appointed to recommend to Governor Dunne a reorganization of the State Board of Health along modern scientific lines.

A motion to revise the fee bill was carried and the chair appointed Drs. Finch, Mason and Lyons to investigate the subject and report to the society.

CHRISTIAN COUNTY

It having been the will of the Great Master of the Universe to remove from our midst, the beloved Bennett P. Windsor, M.D., we, the members of the Christian County Medical Society in solemn assembly do now resolve to express our great distress and sympathy to his bereaved family; and be it

Resolved, That a copy of these resolutions be sent to them, to our daily press and to the *Illinois Medical Journal*, that the world may know the grief we feel.

S. B. HERDMAN, M.D.,

T. A. LAWLER, M.D.,

M. H. SOLLIDAY, M.D., Chairman.

COLES COUNTY

The Coles County Medical Society was called to order by President Coultas at the library.

The following members were present: Ed Summers, Ferguson, McDonald, Parrish, Iknayan, Bell, Coultas and Bryan.

The medico-legal question was discussed.

Dr. Ed Summers moved "That it be the sense of this Society that the idea of medico-legal defense be commended." Motion seconded by Dr. Bell.

Dr. Ferguson moved the following amendment: "If dues be greatly increased on account of medico-legal defense that it be made optional." Motion was seconded by McDonald. Amendment accepted by Drs. Summers and Bell. Motion as amended carried.

Dr. Strickler's application was accepted.

Dr. McDonald read a paper on "Complication of Gonorrhea in Male."

Dr. Voight, paper, "Eye Complications of Gonorrhea."

Dr. Ed Summers, paper, "Treatment of Gonorrhea."

Motion for adjournment carried.

L. A. BRYAN, Secretary.

R. J. COULTAS, President.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting, April 16, 1913

A regular meeting of the Chicago Medical Society was held April 16, 1913, with the following program:

1. "Vasostomy—Radiography of the Seminal Ducts." William T. Belfield.
2. "Roentgenotherapy in Internal Medicine, Surgery and Gynecology." Max Reichmann.

Regular Meeting, April 23, 1913

A regular meeting of the Chicago Medical Society was held April 23, 1913, with the following program:

1. "The Case for and Against Salt in Chronic Nephritis." Alfred C. Croftan.

2. "How Old the New in Medicine and Surgery." (By invitation.) James J. Walsh, New York.

Regular Meeting, April 30, 1913

A regular meeting of the Chicago Medical Society was held April 30, 1913, with the following program:

1. "Various Pupillary Disturbances as an Aid in Diagnosis." George F. Suker.
2. "Danger Signals in Suppuration of the Middle Ear." J. Holinger.
3. "Otolological Paper." Joseph C. Beck.

Regular Meeting, May 7, 1913

A regular meeting of the Chicago Medical Society was held May 7, 1913, with the following program:

1. "Combination Electric Chain Saw with Trephine." Emil G. Hoglund.
2. "First Aid in Eye Injuries." Richard J. Tivnen.
3. "Some Remarks on the Crusade Against Tuberculosis." H. J. Achard.

Regular Meeting, May 14, 1913

A regular meeting of the Chicago Medical Society was held May 14, 1913, with the following program:

1. "High-Frequency Currents: their Nature, Action, Principal Indications and General Technic." Noble M. Eberhart.
2. "Intermittent Claudication Necessitating Amputation, with a Report of Two Cases." Leon Feingold.

ENGLEWOOD BRANCH CHICAGO MEDICAL SOCIETY

The April meeting of the Englewood branch was held on the evening of April 1 at the Englewood Hospital. The meeting proved to be most interesting, entertaining and profitable.

The dermatological clinic by Dr. W. J. M. Cunningham was most instructive and appreciated by all. He showed numerous patients, the first being a case of carcinoma of the lower lip upon which he began treatment some seven months ago by x-ray—soft tube—followed by carbon-dioxid snow. The result was all that could be asked. This case served to show the good results to be obtained in cases in which there is no glandular involvement. He then showed several cases of lues of different types. These were very instructive and served to prove that lues may simulate many diseases. A beautiful case of acne rosacea was also shown.

Dr. Cunningham's cases were all such as are likely to present themselves to the general practitioner. The great practical value of such an instructive clinic is self evident.

Dr. E. E. Simpson presented a skin case for diagnosis and treatment.

Dr. J. J. Moorehead presented a girl, aged 18 years, who at the age of 13 years came to him with a swollen left wrist, function impaired, etc. This was opened and a tubercular fluid was found. Two years later there was involvement of the upper lumbar and lower dorsal vertebra. No lung complication. She was treated by a special corset, diet and fresh air. One year ago she developed rheumatic fever with involvement of most all the joints and a marked endocarditis. This case serves to dispute the theory that rheumatism does not occur in a patient who has had tuberculosis.

Dr. V. D. Lespinasse reported a case of hydrocephalus upon which he had done an experimental operation, having for its object the destruction of the chorioid plexus.

Dr. A. R. E. Wyant then read a most interesting paper on "Why Christian Science Has so Many Foes and so Many Followers." Dr. Wyant proved to be a very able master of his subject as well as extremely entertaining. His paper was greatly enjoyed and brought out a lively discussion.

Even though our *News Letter* was delayed in the mails there were forty-nine present. All voted the meeting enjoyable and profitable and their time well spent.

To those who are not coming to our meetings let me say you are missing something good.

ARTHUR G. BOSLER, Secretary.

The regular meeting of the Englewood Branch was held on the evening of May 6, 1913, at the Englewood Hospital. The entire day was more or less given over to the subjects of the evening meeting, starting in the morning at 10 o'clock with a clinic at the Englewood Hospital at which Dr. Robert M. Ferguson demonstrated his method of open-ether anesthesia. The clinical material was abundant and varied. The first two cases, infants on whom the operation of circumcision was performed, were given the open-drop method and both took the anesthetic beautifully. The third case deserves special mention, it being one on which Ferguson's modification of the Junker apparatus was used, the operation being the removal of a tumor from the parotid gland done intra-orally. It is in this class of cases—operations in the mouth and about the head—that the Junker apparatus is especially applicable. The anesthetist is removed from the immediate field of operation and is not in the way of the operator, who thus far has the entire field to himself. The patient was first put to sleep by the open-drop method and when thoroughly under the Junker apparatus was applied. It worked most satisfactorily. Several other operative cases were anesthetized, the clinic running well into the afternoon hours. Over thirty were present and all voted the clinic most instructive.

At 6:30 in the evening a special luncheon was served; the speakers of the evening, Drs. D. G. Smith and R. M. Ferguson, at the Park Café, 309 E. Garfield Boulevard.

The regular meeting was called to order promptly at 9 o'clock by the president, Dr. C. Hubart Lovewell, who in a pleasing and unique manner introduced the first speaker, Dr. D. G. Smith, secretary Jo Davies County Medical Society, who read a paper on "The Medical Profession and the Business Side of it as it Stands To-day." Dr. Smith's paper proved to be very instructive and entertaining. He brought out many good points, showing that he had given his subject careful and earnest thought. He showed wherein the profession and the business side of it had not kept pace with each other, the profession being better equipped than ever before, but the remunerative part of it had not advanced accordingly. He believes that the county society is the nucleus from which all necessary changes must come, that every doctor can help, that we forget our animosities and labor for the good of our people. That if this is done we will place ourselves on a higher plane and our financial obligations will be duly met. In closing he made a strong plea for united effort and suggested that at each meeting a few moments be set aside for the consideration of matters pertaining to the business side of our profession.

The discussion of this paper was opened by Dr. J. W. McGuire, who related the very beneficial changes brought about by a little united effort on the part of some members of the profession in his neighborhood in Grand Crossing.

Dr. Robert M. Ferguson, East Orange, N. J., then talked on "Rational Methods of Open-Ether Anesthesia." In opening he spoke at length on the psychology of anesthesia, stating that he believed the handling of the patient mentally was of prime importance; that the things to be done for a successful anesthesia are very few and very simple. By way of preparing the patient for the anesthetic he endeavors, first, to remove all fear and, second, when the patient is on the table he makes it an invariable rule to tell him the truth. He has found that 1,770 out of 1,800 entertain ideas of impending danger: first, those who think something is going wrong, and second, those who fear being cut before they are completely under. He overcomes this by assuring them that everything is all right and by allowing nothing to be done to the patient until he is thoroughly anesthetized.

He then described the various methods, stating that simplicity was of prime importance, that instruments and other paraphernalia serve to detract attention from the patient. He spoke of the closed (bag) method, also the semiopen (cone)

method only to pass them up in favor of the open method. His reasons for using the open method are: first, simple apparatus—an ordinary mask and eight layers of gauze—second, patient gets all air possible and no restriction of respiration; third, no accumulation of carbon dioxid, and fourth, spontaneous evaporation of the ether. Dropping the ether a drop at the time constitutes the open-drop method. His general rules are: first, allow no air between the inhaler and the face, have it all go through the inhaler; second, no limitation to respiratory air, the air does not interfere, the question is the ether, which should be so given as to have spontaneous evaporation; third, do not cover the eyes or the chin with the mask.

The question of preliminary opiates was fully discussed. As a rule he gives no preliminary opiates, for the reason they contract the pupils and slow respiration—your guides. There are three classes of cases in which he gives preliminary opiates: first, exophthalmic goiter cases; second, alcoholics; third, athletic men. He gave his reasons for same.

The claim that oil of orange increases the anesthetic properties of ether was branded as false; its only good being for esthetic reasons, its odor being twenty to thirty times stronger than ether.

The method of the actual giving of the ether was thoroughly and carefully considered. In starting an anesthetic Dr. Ferguson begins by dropping a small drop slowly. And right here is a most important point in giving ether. By so doing he anesthetizes the mucous membrane of the upper respiratory tract and there is no irritation later. To anesthetize the mucous membrane requires from one-half to one minute. He advises never to drop faster than the ether will evaporate. His average time for 1,000 cases is four and one-half minutes to put the patient in deep surgical anesthesia. By his method there are no serious after-effects and only 8 per cent. are nauseated.

Ferguson's modification of the Junker apparatus was fully demonstrated.

Anesthesia reduces the patient's resistance to infection and to overcome this Dr. Ferguson uses pure olive oil. His method is to inject immediately after the anesthetic from 5 to 6 ounces of pure olive oil heated to 106 degrees F. high up in the rectum. By doing this he claims the opsonic index is restored to what it was before the anesthetic within from three to six hours.

The entire presentation of the subject was done in a most masterful manner, highly instructive and appreciated by all.

A vote of thanks was extended to Drs. Smith and Ferguson. The attendance was sixty-one. All kinds of ether around and not one sleepy moment during the whole evening.

The following officers were nominated for the coming year: president, J. H. Hess; vice-president, L. J. Osgood; secretary-treasurer, A. G. Bosler; councilor to Chicago Medical Society, C. Hubart Lovewell; alternate councilor to Chicago Medical Society, J. S. Hunt; local councilors, J. Sherlaw and W. S. Bougher.

ARTHUR G. BOSLER, Secretary.

NORTH SHORE BRANCH CHICAGO MEDICAL SOCIETY

THE LARYNGO-TRACHEAL MANIFESTATIONS IN DISEASES OF THE NECK*

OTTO J. STEIN, M.D.
CHICAGO

In order to reach a greater certainty in diagnosis every aid and method of examination practical should be undertaken. The more general use of the laryngoscope and the laryngo-tracheal tubes for direct inspection with a better interpretation would add materially to such an end. The laryngoscope and esophagoscope may reveal much valuable information previously unsuspected. The neurologist

* Read before the North Shore Branch Chicago Medical Society, April 1, 1913.

and internist recognize the importance of ophthalmoscopic findings as an index to a host of changes taking place within the brain and cord, for instance, and therefore have added this to their regular course of examination. But they, like the surgeon, have not yet learned the immense value of careful and routine investigation of the laryngo-tracheal and esophageal tracts. As an illustration I wish to relate a most interesting occurrence that took place at Mount Sinai Hospital. Dr. Yankauer, one of the attending laryngologists, had permission from the internists to bronchoscope the bronchiectatic cavities in all their cases. Among others a man, aged 67 years, was presented with diagnosis of empyema. Aspiration of chest was negative; also the Wassermann and tuberculosis tests. He suffered from pain in the right lower chest; had chills, fever, sweats and expectorated muco-pus to the amount of 200 c.cm. a day. The bronchoscope revealed a piece of chicken bone in the lowest terminal branch of the right bronchus, 35 cm. from the upper teeth. This was removed and recovery followed.

In two classes of disease in particular, namely, tabes and thyroid gland disorders, the findings within the laryngo-tracheal tract are at times interesting and not infrequently important, because there may be certain changes present previously unsuspected and perhaps unattended by subjective symptoms, from which an early diagnosis may be made and the extent of the primary disease might be estimated. If I were to do justice to this subject I would have to enumerate a long list of disorders occurring within or near the neck that should properly be considered as having a possible influence upon the laryngo-tracheal and esophageal tracts, but kindly permit me to select just a few for special attention, dismissing the remainder by a mere mentioning of their names, as follows:

Abscess, enlarged lymph glands, enlarged salivary glands with or without calculi, ranula, Ludwig's angina, cellulitis of the tissues of the neck, angioneurotic edema of the throat, branchial cysts, various tumors, gumma, etc., tubercular deposits or pleuritic adhesions at the apex, various diseases, inflammations, injuries and foreign bodies within the larynx, trachea and esophagus, enlarged thymus gland, aneurysm and thyroid gland disorders.

It is the two latter, aneurysm and thyroid disease, that I will select for further elucidation.

Aneurysms contributing to changes that may affect the laryngo-tracheal tract are those of the arch of the aorta, right subclavian artery, and the innominate artery, which are found within the thorax, and those of the carotid artery, located in the neck, particularly near the bifurcation of the common. This condition has most frequently to be differentiated from thyroid tumor, enlarged lymph glands and neoplasms. The laryngo-tracheal symptoms of aneurysm are cough, dyspneic attacks, suffocation, changes in the voice, tracheal tugging and hemorrhage. Pressure upon some veins may produce an edema within the larynx. Continued increasing pressure upon the trachea causes irritation, with cough, mucous expectorate, asthmatic attacks, suffocation and hemorrhage. The tugging is the result of the pulsation of the aneurysm against the bronchus and trachea and can be felt with the finger on the cricoid. The cough, from its peculiar character, may suggest the dry stage of an acute laryngitis, especially when associated with spasm of the glottis. The terms brassy, metallic and cow-like have been applied to this cough. The triad of symptoms, namely, cough, dyspneic attacks and voice changes, are due to pressure symptoms upon the nerves supplying the larynx. As this nerve distribution is of such importance, and as the symptoms called forth from their disturbance are similar to those found in thyroid gland disorders, a few words relative to the nerve innervation of the larynx may enlarge our understanding of this subject.

On either side of the neck is a superior and an inferior laryngeal nerve; both off-shoots of the pneumogastric. The former, or superior, although supplying sensation to the entire lining mucous membrane, has also an external branch that conveys motor impulses to two muscles, the cricothyroid, a tensor muscle of the cord, and the inter-arytenoideus, also a tension muscle closing the posterior chink

of the glottis. This superior nerve also has incorporated with it fibers containing vaso-motor function, causing blotching and redness of the mucous membrane; and also secretory fibers, which upon stimulation cause mucus to secrete. There is besides a communicating branch between the superior and inferior nerves which is of sensory origin and function. The inferior, or recurrent laryngeal nerve, being the motor nerve, supplies motion to all the rest of the muscles. It contains both abductor and adductor fibers that run together but are separate. The abductors are more vulnerable and succumb first to inhibitory action. This is seen both in peripheral as well as central (bulbar) lesions, such as tabes.

There are separate cortical laryngeal motor centers for abduction and adduction of the cord, and each is bilateral. Stimulation of either side produces bilateral spasm or adduction, but destruction of one side produces no paralysis, because the other side is officiating.

"The order in which the muscles succumb is, first, the crico-arytenoideus posticus (the posticus or abductor), then the thyro-arytenoid and, finally, the crico-arytenoideus lateralis (adductor). The latter also recovers first." (Semon's law.)

In an aneurysm pressing upon the recurrent nerve irritation or spastic symptoms may appear, such as paroxysmal glottic spasm, which has to be differentiated from hysterical paralysis, the laryngeal crises of tabes, hydrophobia and tetany. If the pressure continues, paralysis ensues. The first appearance of a progressive paralysis shows the cord in the median or adductor position. It may not remain there very long, for the adductor fibers soon succumb and the cord is then found in a position called "cadaveric," that is, midway between ad- and abduction. In the beginning of this paralysis the voice is not changed, and hence there is no suspicion of a cord paralysis. Should both recurrent nerves be pressed upon, but only their abductor fibers involved, both cords would assume the median position, with only a chink behind left open by the inter-arytenoideus supplied, as before stated, by the superior laryngeal nerve. Such a patient can talk all right, and perhaps arouse no suspicion of paralysis so far as his voice alone is concerned, but he cannot separate his cords for deep breathing; he is liable to be dyspneic and have suffocating attacks. Death from suffocation has occurred. Such an occurrence is related by Williams. A newsboy was brought into the Bristol Royal Infirmary for sudden respiratory embarrassment and died before tracheotomy could be made. Autopsy showed a large retro-tracheal thyroid had by pressure produced atrophy of both posticus muscles with consequent bilateral abductor paralysis. Ankylosis of the arytenoid must be differentiated from paralysis of the cord.

The various thyroid gland disorders that may provoke changes within the larynx, trachea and esophagus are: Acute inflammations with or without supuration; simple parenchymatous enlargements; gumma, cyst hemorrhage, or tumors within the gland. The exophthalmic type of the disease is the least likely to produce laryngo-tracheal symptoms, on account of its more uniform enlargement and, besides, is less likely to become so large or firm.

The effect of thyroid disorders upon the laryngo-tracheal tract may be one of irritation, stenosis or paralysis. An irritation of the recurrent nerve may create a spastic action of the cord. This condition takes the form of a laryngismus stridulus, or, what is more common, individual groups of muscles are involved, causing sudden severe and paroxysmal attacks of coughing. Such attacks occurring in an apparently otherwise healthy individual, and resisting ordinary treatment, should arouse suspicion of local irritation from an enlarged or diseased thyroid gland. At times these attacks may vary in character. A fearful constriction seems to grasp the throat, causing a sense of suffocation, and accompanying this there may be intolerable burning and scratching within the throat, and finally there comes a severe paroxysm of coughing. In place of the paroxysm there may be a chronic cough that is dry in character. The manifest size of the gland, as determined by ocular examination or palpation, is not necessarily a definite means of determining the exact size or the degree of pressure it may be exercising. It

occasionally happens that the gland is of such enormous size or some accessory or vagrant gland, like the pyramidal lobe, may rise high enough in the neck to irritate the external branches of the superior laryngeal nerve which supplies motion to the crico-thyroid muscle, and thus interfere with perfect voice production.

In hypothyroidism the voice is likely to be husky and heavy, due to a dryness of the mucous membrane, while in hyperthyroidism it may have a tremor and appear weak, even aphonic.

Stenosis may occur as a simple narrowing of the lumen of the glottis from abductor paralysis, or from an edema from pressure upon neighboring veins, or from complete closure of the air tract by encroachment of the growth from within, or by invasion of its interior. Incidentally should be mentioned the possibility of tracheal stenosis from an enlarged thymus. Chevalier Jackson was the first one to demonstrate this with the tubes. This method of direct inspection with the tubes has become a great aid in diagnosis and treatment of many disorders of the trachea and esophagus, and the field for their usefulness has so broadened that it has even become a specialty by itself.

Normal masses of thyroid tissue, known as accessory or vagrant thyroids, have been demonstrated within the lumen of these parts and will cause stenosis. Their presence within the larynx, trachea and bronchi is more frequently due to direct extension to the fibrous interspaces of the walls, and perhaps seldom the result of embryologic migration, a condition common to other parts.

Paralysis. The manner in which a paralysis occurs has already been described in reference to aneurysm. The causes may be ante-operative, during operation or post-operative. The enlarged or diseased gland may cause the paralysis by pressure on the laryngeal nerves *before* any operation has taken place. Injury to the nerve *during* operation will result in a paralysis. Ligature knots, drainage material, confined hemorrhage or serum, inflammatory exudates and a collateral edema causing pressure on intrinsic muscles may be causes *following* operation. In the production of a paralysis taking place before operation, consideration should be given to the size, location, consistency and length of time the gland has been involved, and also to firm muscular and fat necks, where a contributing pressure is added to the growing gland. Also an enlarged gland on one side may produce paralysis of opposite nerves. That paralysis is of frequent occurrence is seen from Matthews' figures. Out of one thousand cases of goiter observed at Rochester, there were 289 paralyzes, 17 being bilateral. Now, many of these paralyzes exist without manifest changes in voice or respiration, and unless one has made a thorough investigation of the interior of the laryngo-tracheal tract, these changes will be overlooked. As already mentioned, the first effect of pressure on the nerve, aside from irritation, is an adduction of the cord, so that it assumes a fixed position in the midline, because of involvement of its abductor fibers. Now, unless the opposite cord is similarly affected, there will be no appreciable changes in voice or breathing under ordinary conditions. As the pressure continues, so as to implicate all of the fibers within the nerve structure, the adductor muscle relaxes, and the cord assumes the "cadaveric" position. By this time the other healthy cord accommodates itself to the new condition and by an over-action crosses the midline on adduction, and meets its paralyzed fellow towards the side. Thus, again, defeating the occurrence of hoarseness or aphonia. If the surgeon performing thyroid operations was to examine all of his cases intralaryngeally, he would many times be astonished to find a paralysis with no symptoms present. Therefore, every case should be carefully examined both before and after operation. It has been my privilege quite frequently to examine the larynx of cases before and after thyroid operation, and the findings were often manifestly interesting because no symptoms were present indicating the condition as found. The value of such systematic examinations can readily be seen from the following case of my own practice. I was asked to examine a patient for hoarseness by a surgeon who had recently operated for the removal of a goiter. The laryngoscope revealed a complete paralysis of one vocal cord. At the same

time I recognized in the patient one who had visited my clinic some months before and whose record showed at that time the patient having a unilateral abductor paralysis. With such a condition there is no change in the voice, but later as the adductor fibers became involved hoarseness appeared. I learned later from the surgeon that his patient was threatening suit for damage to his voice as a result of the operation. But fortunately for the surgeon my records showed the damage to the cord from pressure of the gland before operation.

32 North State Street.

CHICAGO OPHTHALMOLOGICAL SOCIETY

Regular Meeting, Feb. 17, 1913.

A regular meeting of the society was held Feb. 17, 1913, in the LaSalle Hotel, with Dr. W. O. Nance in the chair.

CASE OF TUBERCULAR KERATITIS

DR. M. H. LEBENSOHN: Mr. H. H., aged 30 years, a painter and moulder by trade, was first admitted to the Illinois Charitable Eye and Ear Infirmary Oct. 13, 1911, under the service of Dr. Nance, with the following history:

About three years before that he woke up one morning with a sensation of a foreign body in the right eye which was removed by a fellow workman. A doctor whom he saw next day did not find any foreign body. The eye not feeling comfortable after the removal of the foreign body, a few days later he consulted Dr. E. V. L. Brown (the eye then was red and painful), who made the diagnosis of tubercular keratitis. Under treatment extending five to six weeks the eye became quiet.

The eye did not trouble him again seriously until recently he complained of pain, photophobia and lacrymation. The entire cornea was nearly covered with a grayish opacity, but in the lower half of the cornea an area of from 4 to 5 mm. was elevated about a millimeter. The iris markings were indistinct, pupil reacted to light, the fundus could not be seen on account of the corneal opacity, only the red reflex could be discerned. Repeated Von Pirquet tests were made which were strongly positive.

His family history elicited at the time. His father died at the age of 38 years and two sisters, one at the age of 22 and one at the age of 26, all died of pulmonary tuberculosis.

His general health was good and temperature normal. He was given one injection of old tuberculin, and the usual local treatment, atropin, dionin, etc. In a few weeks he was well again, all acute symptoms subsided and he was discharged from the infirmary.

He was readmitted to the infirmary the 26th of last month with the eye in the same condition as it was upon his first admission. In addition the lens became cataractous. His general health was good, but he had a rise of temperature 99.2 in the afternoon for a few days. After the temperature remained normal three days he was given a hypodermic injection of 4 m. old tuberculin. The local and general reaction were very positive, but there was also a marked focal reaction; the eye, which was red and much inflamed and did not react to atropin, dilated readily and the inflammation subsided after the injection.

Dr. Tydings agreed as to the diagnosis in this case and emphasized the fact that the patient had a keratoconus. This he said could be controlled by the proper application of a bandage. He has used such a bandage in a number of cases for a number of years with good effect. It is a webbed elastic band with a cotton compress under it, which is left on until the cornea becomes absolutely normal.

In reply to a question by Dr. Faith as to how long the tuberculin treatment was carried out, Dr. Lebensohn said that tuberculin had not been used therapeutically.

Dr. W. F. Coleman had a severe case of tubercular keratitis with positive tuberculin test in which he gave tuberculin for some time without benefit. The same was true of dionin and other drugs. He got the most benefit from roentgenization.

ACROMEGALY

Dr. Joseph C. Beek exhibited a typical case of aeromegaly, the patient being totally blind. The aeromegaly began eight years ago, and two years later the first disturbance of vision was noticed. Within a year and a half the man was totally blind. He also has a nystagmus and an optic atrophy. Otherwise the clinical history is negative.

Dr. Beek also exhibited a case of progressive optic atrophy from the disease of the hypophysis in a boy, aged 15 years. Eight years ago he was operated on for adenoids. There was then no evidence of disease of the eye. Vision was apparently normal following the operation. There was loss of vision—1/100, with white pupil. The boy is able to get about and attend to his work.

Dr. Peter Bassoe inquired as to the development of the genitalia of the second patient. He thought the boy was rather fleshy and suggested that it might be a case of the Froehlich type rather than an aeromegaly.

Dr. Julius Grinker referred to a case of aeromegaly very much like Dr. Beek's which he demonstrated some years ago. The patient had had the disease for fifteen or twenty years, but did not show any eye findings, nor blindness, nor temporary hemianopsia. He could read a newspaper to the end of his days. At the autopsy he found a hypophyseal tumor as large as his fist, and the optic chiasm thinned out to the thickness of tissue paper. There was an opening into the third ventricle. There was no optic nerve atrophy. He thought it rather remarkable that with an optic chiasm so thin vision still continued normal. The patient also had epilepsy. He thought that in the majority of these cases a tumor could be found in the pituitary region. He did not think that an operation would be of any benefit.

Dr. Beek, replying to Dr. Bassoe, said that the boy's functions seemed to be normal. His genitalia were of normal size and development. The boy did have a tendency to adiposity.

Dr. J. Elliott Colburn read a paper entitled "Commonplace Topics in Ophthalmology," in which he called attention to some of the errors made in filling prescriptions for glasses, that is, on the part of manufacturers, and suggested that no patient should be discharged until the glasses had been checked up with the prescription to make sure that they were absolutely right. He also called attention to the fact that patients suffering from eye trouble should have their arterial tension investigated. He reported a number of cases which illustrated to his mind the necessity and importance of such an examination.

HYPOPHYSIS

A symposium was presented on the hypophysis. The papers of the evening were prefaced by a short talk on the gross anatomy and relationships of the pituitary body, or as it is technically called the "hypophysis cerebri," by Dr. J. F. Burkholder. The specimens were prepared in the Nelson Morris Memorial Institute for Medical Research.

It was assumed that all present had been graduated sufficiently long to have forgotten most of the anatomy that they had acquired at college, and on account of this universal fact two brains were shown, which demonstrated very clearly what was intended to be shown. One specimen was that of a dog's brain in which the *circulus arteriosus* (circle of Willis) was left in situ, as well as the two oculomotor nerves. The relations of the hypophysis to these two structures and also to the *pedunculi cerebri*, the *tuber cinereum*, the *infundibulum*, the optic chiasma, the optic tracts and the *corpora albicantia* were self evident on inspection. The other gross specimen was that of the brain of a large bear. It will be observed that the two specimens shown were the brains of carnivorous animals. It is worth remembering that in this species of mammalia the dia-

phragm sellae is poorly developed and can be said to form a very indifferent roof to the fossa hypophysies (sella turcica) and as a consequence the pituitary body is easily recovered with the brain, while the reverse is the case in all herbivora and omnivora.

Another instructive demonstration was a series of sagittal sections of the hypophysis of the sheep. These selections were stained by the contrasted Pal-Weigart process, and showed the posterior lobe or pars nervosa, the anterior lobe, and the pars intermedia of Herring, all of which could be easily seen without the aid of a glass.

Attention was called to the arterial supply and sinus relations of the hypophysis. The pituitary body in some animals, as in the sheep for example, is surrounded by a very dense plexus of arterioles that is formed by the breaking up of the internal carotid artery as it enters the cavernous sinus, forming what Galen called the rete mirabile. This plexus of vessels completely surrounds the hypophysis, though the systems of the opposite sides do not anastomose, thus supplying an enormous quantity of blood, which is unquestionably for secretory purposes.

TUMORS OF THE HYPOPHYSIS AND THEIR RELATION TO ACROMEGALY AND FROEHLICH'S SYNDROME

Dr. Dean D. Lewis discussed the pathology and symptomatology of tumors of the hypophysis and showed a very interesting series of lantern slides on which he based his remarks.

Much of the confusion that has existed concerning the relation between lesions of the hypophysis and clinical syndromes associated with them has been due to a misinterpretation of the pathologic changes occurring in the gland. Many of the difficulties in pathologic diagnosis were due to the rather imperfect knowledge that we had at one time concerning the histology of the gland.

Most of the tumors which were found associated with the early cases of acromegaly were regarded as sarcomas. If they were sarcomas they were destructive in character and acromegaly should, then, be regarded as the result of diminished secretory activity on the part of the hypophysis. A refined histologic technic has shown that the tumor most commonly associated with acromegaly is an adenoma of the anterior lobe cells and that in by far the greater proportion of cases the adenoma associated with this symptom complex is composed of eosinophil cells. Depending upon the stage at which the hypophysis is examined in cases of acromegaly, a hyperplasia of anterior lobe cells, an adenoma of the same or a cyst may be found. The tendency in all glands is that periods of intense activity, associated with hyperplasia or adenoma formation is followed by regressive changes. Cyst formation represents such a regressive change in the hypophysis and is associated with the terminal or cachectic stage of acromegaly.

Chromophobe adenomas are usually associated with marked neighborhood symptoms and many of the phenomena of Fröhllich's syndrome.

Pathologically, one of the most interesting types of tumor about the hypophysis is that which develops from undifferentiated mouth epithelium. Nests of undifferentiated mouth epithelium are frequently found upon the anterior surface of the infundibulum. Tumors arising from these occupy the interpeduncular space, producing eye symptoms early by pressure upon the optic tracts. This type of tumor is the one most frequently accompanied by Fröhllich's syndrome. These tumors tend to undergo cystic degeneration and histologically correspond rather closely to adamantine epitheliomas occurring in the jaws.

Recognition of the different cellular elements occurring in the hypophysis and their relation to tumor formation simplifies the classification of tumors and renders clear the relation which the tumors bear to the different syndromes associated with altered hypophysal secretion.

THE EVOLUTION OF THE OPERATION ON THE HYPOPHYSIS

Dr. Joseph C. Beck discussed the present status of the various operative procedures employed in the removal of tumors of the hypophysis, illustrating his remarks with lantern slides, and gave a brief review of the literature on this subject with special reference to the ocular manifestations.

The development of the operative interference on the hypophysis dates back to the experimental work on animals, especially on cats, splitting the soft palate and entering the sphenoid from the vault of the pharynx. About the same time Fritz Koenig reported a similar procedure on the cadaver, but it remained for Sir Victor Horsley to perform the first operation on man after the suggestion of Koenig on the cadaver. This operation was by the subtemporal route (middle fossa). The extracranial methods aside from the one suggested by Koenig, were performed by Schloffer, who turns the nose to one side and makes a temporary resection of the superior maxilla to the opposite side thus reaching the sphenoid and sella tureica, the turbinates and septum being removed. This operation was modified and improved upon although the principles remained the same, by Von Eiselsbergard Hochenegg. The return to the intracranial route and one finding considerable favor was that of Krause, who exposed the brain in the fronto-temporal region on one side by an osteoplastic flap, elevating the frontal lobe as far as the region of the optic chiasma; the dura was then incised in the region of the infundibulum; he located by an angular knife and slit the dura diaphragm, thus exposing the pituitary body. This method was soon modified by Killian, who made an osteo-plastic flap exposing both frontal lobes immediately, incising the dura and retracting the brain, thus exposing the sella in the median line. The next progressive step in the operative procedure was by the extracranial method. This was by severing the nose, laying it on one side, taking the eventual blind eye so frequently present, removing the orbital contents and the internal orbital wall including the turbinates and ethmoid cells, thus reaching the sphenoid and sella. It was Loewy's operative technique of severing the nose by making an incision below the upper lip and retracting all the structure covering the face that led to the next progress in the operation to which Kanavel of Chicago contributed the first procedure by severing the nose at the natural alar folds and septum, turning this up and removing the septum submucously, reaching the sphenoid and thus the sella. This was soon followed by the suggestion of Halsted, using Loewy's principle of entering the nose, removing all intranasal structures before entering the sella. About the same time several men, Cushing, Hartley and others, attempted the cranial route. At this time the first rhinologist came into the arena, viz.: Hirsch of Vienna, who entered the sphenoid by the Hyack method, doing a preliminary middle turbinectomy and ethmoid curettement thus opening the sella by specially devised instruments. This was soon followed by modifications of West, who in addition to this former procedure removed a section of the posterior portion of the septum. This led to the next modification or rather the new developed technique of Hirsch by making a complete resection of the septum submucously, converting both sphenoids into one large cavity, thus entering the sella. Citelli also modified the operation by only resecting the posterior portion of the septum, entering both sphenoids and following the same procedure as Hirsch.

Chiari of Vienna reached the sella by a procedure identical to Killian's radical operation on the sinuses, claiming more direct route and less deformity.

Recently McArthur of Chicago advocated a method (transfrontal sinus supra-orbital), by removing a section of bone temporarily, following very much the suggestion of Krause, and the most recent article on this operation is the modifications of Frazier of Philadelphia, who, making a large frontal flap with the head hanging in a nose position, is thus able to get a wider exposure.

In conclusion the writer wishes to suggest an operation which he has developed on cadavers after having performed almost all the other aforesaid operations on the cadaver. Believing this to be the shortest, easiest and least deforming route to the sella. It is essentially the Behren's operation of reaching the sphenoid

by way of the antrum of Highmore. The detailed description and illustration of the technique of this operation, as well as the majority of the above mentioned will appear in an original article in the near future in *Ophthalmology*.

Dr. Emory Hill read, as an entrance thesis, a paper entitled "Hypophysis Disease from the Ophthalmological Standpoint, with a Report of Two Cases." He discussed briefly the anatomy and physiology of the hypophysis, referring especially to the recent experimental work of Cushing and others establishing the classification of pituitary disorders as hyperpituitarism (gigantism and acromegaly), dyspituitarism and hypopituitarism (Froehlich syndrome). The first case was typical of hypopituitarism: A far sexually infantile boy with polyuria, presenting transient visual disturbance without ophthalmoscopic signs and regarded as hysterical; later primary optic atrophy and temporal narrowing of the visual field and scotoma developed. Symptoms of increased intracranial pressure supervened. The x-ray showed an enlarged sella. Operation by the Kanavel method revealed a cyst which was evacuated, resulting in recovery, with some improvement of vision which has persisted for two years.

The second case represents the group called "dyspituitarism"; former pituitary over-secretion being indicated by precocious sexuality and bony growth, later undersecretion manifested by persistent subnormal temperature and increased carbohydrate tolerance. The x-ray shows some erosion and backward tilting of the sella. Temporal hemianopsia (left) and blindness (right), with primary optic atrophy and abducens paresis (right) are the eye findings. Operation is not advised, the growth probably being interpeduncular and involving the hypophysis secondarily by pressure.

The literature of the eye symptoms is reviewed and the conclusions drawn are that temporal hemianopsia is found only in a minority of cases, many varieties of visual field limitation, with color interlacings and scotomata, being possible evidences of hypophysis disease, while exophthalmos, ocular muscle palsies, papilledema and secondary optic atrophy may result from pressure in the region of the hypophysis as in the other parts of the cranial cavity.

Dr. C. D. Wescott said that Dr. Hill's first case illustrates the trouble one gets into by not making a thorough physical examination of every eye patient and getting a complete history. There was nothing in the history of the first case when he first saw the patient which seemed to warrant a thorough physical examination. The practical recovery of vision in the blind eye in less than two weeks seemed to confirm the diagnosis of hysteria. This was the first case of the kind he had ever seen, but it certainly had converted him to the absolute necessity of full and complete examination in every case. He suggested that it might be well for the ophthalmologist to consult with the internist, the neurologist, rhinologist, and so forth, whenever such consultation could be made with profit, because it would save him from any pitfalls and insure better service to the patients.

WESLEY HAMILTON PECK, Secretary.

Regular Meeting, March 17, 1913.

A regular meeting was held March 17, 1913, with the president, Dr. Willis O. Nance, in the chair.

BROWN-SEQUARD PARALYSIS

Dr. Geo. W. Hall exhibited a case of Brown-Séquard paralysis, showing ocular involvement of the sympathetic nerve. The patient gave an indefinite history of specific trouble some years ago. His trouble began suddenly Aug. 10, 1912. While standing, about 4 o'clock in the afternoon, he suddenly became paralyzed on the left side, with complete loss of sensation. A week before he had slight sensation in the back of the neck which he thought was due to a cold or draft playing upon the neck. Between times there was no disturbance whatever. For some time he had a slight pain in the back of the neck, but this soon disappeared. He was admitted to the County Hospital August 14, and at that time he was found in a worse condition than now. He then had marked ptosis of the right eye. One



CHARLES J. WHALEN, M.D.

PRESIDENT ILLINOIS STATE MEDICAL SOCIETY 1913-1914

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could see a difference in the palpebral fissure of the two sides. He also had narrowing of the pupil on the right side, with a slightly sunken condition of the eyeball which was very manifest. Lumbar puncture disclosed an increased number of lymphocytes in the spinal fluid, with a slight reaction to the Noguchi test. He was put on mixed treatment and showed considerable improvement. At the present time he has practically complete loss of sensation on the right side of the face, which includes the distribution of the sensory portion of the fifth nerve without involvement of the motor portion. When he closes the mouth the masseters contract equally on both sides. There is no other evidence of motor disturbance. The sclera on the right side shows marked anesthesia. He has complete loss of the Brown-Séquard syndrome on the left side, the loss of temperature and pain sense with the presence of tactile sense. The lesion is located in the lower cervical and first dorsal portion of the cord. It is not unusual to find this sympathetic involvement with external lesions, that is, with tumors, and so on. The eye syndrome is connected with the process in the spinal cord and is not due to an external condition in the sympathetic ganglia.

DISCUSSION

Dr. George F. Suker said it was extremely rare to have the lesion in the spinal cord proper to involve the sympathetic. The rapid sinking in of the orbit and narrowing of the palpebral fissure were accentuated by the involvement of the fifth nerve. The perspiration on that side of the cheek had been markedly reduced. In looking up the literature he had not found a case of lesion of the sympathetic that presented this symptom complex. If the attack happened, as in the case of Dr. Hall, from a hemorrhage in the lower cervical and upper dorsal region, it behooves the ophthalmologist, when a patient consults him, not to jump to the conclusion that the lesion must be in the superior sympathetic ganglion: it might be low down, and one should make a careful examination of the fifth as well as the sympathetic arising from that area.

He asked Dr. Hall whether he examined the eye grounds to determine whether there was enlargement of the retinal veins as compared with the other side.

Dr. Hall replied by saying the man's condition had improved; that the pupil was not nearly so narrow or small as it was. He had better use of the eyelids than formerly, but as to whether complete recovery would take place it was hard to say. Improvement was gradually taking place.

RELIEF OF EYE STRAIN IN HIGH ASTIGMATISM BY THE USE OF A DIFFERENT AXIS OF THE CYLINDER FOR DISTANCE AND NEAR

Dr. C. G. Darling stated that of late he had seen two cases of high astigmatism in which the patients received a great deal of relief by having their cylinders set at a different axis for reading and distance.

The first case was a man aged 51 years, who had a high mixed astigmatism. He was unable to read for more than a few minutes at a time without his eyes and head aching and print blurring. He was wearing R. E. — sph. — 1.75 — cyl. — 4.50. Axis 120. L. E. sph. — 1.50 cyl. + 5.00 axis 60° with a sph. + 2.00 added for reading, the distant correction giving him normal vision in each eye. He also had about a dozen prescriptions for glasses; some, he said, were about as good as the ones he was wearing and others he could not wear at all.

He found that his glasses were what he should have for distance, but when testing his eyes at the reading distance he found by trying one eye at a time he could see much better if the cylinders were rotated out 5° in the right eye and 10° in the left from the axis he had found best by monocular test for distance. These were ordered and he reported perfect comfort of his eyes for distance and near since the change, now over eight months.

The other case Dr. Darling reported was a young lady, aged 25 years; the left eye being amblyopic as a result of a convergent strabismus. She obtained 20/25 vision with a sph. + 1.00 cyl. + 5.50, axis 115°, which he ordered. Three weeks later she returned saying she could only read a short time with her glasses.

He then tried turning the axis of her cylinder out while she looked at fine print held at the reading distance; she found this to be more comfortable and the print was also clearer. He again tried her distant vision and she accepted the cylinder as before for distance. She reported being able to read with comfort with the special reading glass in which the cylinder was placed at 10° different from her distant lens.

The amount of torsion which took place in normal eyes had been measured by different methods by many men, and tables have been given by some to show its amount when the eyes are in different positions. These vary somewhat, but Howe believes they are as constant as the measurements of accommodation, convergence or of other physiologic experiments. The amount of torsion depends on the amount of convergence and accommodation which is exerted, and also on the position of the plane in which the visual axes lie.

DISCUSSION

Dr. H. W. Woodruff asked if it was a monocular or binocular test for torsion.

Dr. W. Franklin Coleman said he had followed the ophthalmic literature since 1870 and had seen nothing written on the subject except a paper that he read before the Chicago Ophthalmological and Otological Society, Feb. 8, 1887. He purposed to review here only two cases by way of illustration. His own experience in most cases shows that the refractive error, unlike Dr. Darling's cases, was quite moderate; although recently he had a case of 15 D. of myopia with 3.5 D. cyl. which in one eye at least, if not both, speaking from memory, the axis of the glass for reading differed 30° from that accepted in distant vision.

In 1883 a patient, aged 37 years, asthenopic, showed under homatropin right eye $+36$, $75^\circ = 20/20$. Under accommodation the right accepted -36 , at 180. The patient reads best with $+36$ at 75 , which relieved all the symptoms. This axis varies 15° from the axis of the $+$ glass accepted under accommodation.

The second case, aged 37, November, 1883, could only read half of a column of a newspaper without severe eye pain. Under homatropin the cylinder accepted was $+36$ at 15° right eye. Under accommodation -48 at 120. The left eye $+36$ at 165 under homatropin and -48 . 60. This axis for reading distance in the right eye varies 30° from the glass for distant vision under accommodation. The left eye varies 15° from the distance glass under homatropin.

In prescribing the strength and axis of a cylinder he has always followed Burnett's advice in his book to give the one accepted by the patient under accommodation.

Another case from memory is that of a lady, the mother of an oculist. He has prescribed for her cylinders for reading at a different axis from the distance glasses. Having lost her glasses, she was twenty years after examined by two oculists without satisfactory results, when he was written to for the prescription which gave the relief required.

In attempting to account for the reason of the acceptance in reading of a different axis, we might suppose that the ciliary muscle acted in convergence in certain meridian, as Dobrowski proved it is possible to compensate for or to change the axis of the corneal astigmatism, but since the changed axis in reading usually corresponds more nearly with the axis of the distant glass accepted under accommodation, it is more likely that the change is due to the rotation of the eye on its antero-posterior axis; that is to say, if the nasal end of the horizontal meridian is moved downwards in reading, it would be due to the action or over action of the superior oblique muscle. On the other hand, if the nasal end of the meridian is moved upwards, it would be due to the over action of the inferior oblique.

In conclusion, we all should test the reading vision under glasses of all our patients, and if it is not satisfactory as compared with distant vision, we should rotate the cylinder to the most acceptable axis for reading.

In answer to a question asked by the president of how many cases the speaker has seen, he would say conservatively from memory, at least a dozen, but the majority of these patients he saw in his earlier practice and he is afraid that he has not found more since for the simple reason that he with his confrères would not see what they did not look for and too often failed to look for.

Dr. Darling, in reply to Dr. Woodruff, said he tested one eye at a time at the near point. After the cycloplegic had worn off, a few days later he could find the axis cylinder for distance, and the patient could read and often took a different axis for reading. In the other case the doctor did not give the different axis for distance and reading, but made a post cycloplegic test, and in place of making a monocular test he tested both eyes for distance at the same time, and found the patient felt easier if he took a different axis or monocular test, correcting the cyclophoria, and not torsion. The amount of torsion ordinarily for reading distance is at 1.5 or 2° . When a man converges and looks up, he averages about 15° of torsion. If he looks up there is a difference of 15° between the vertical meridian and axis of it than if he were looking straight ahead.

SYPHILIS OF THE EYE AND ITS APPENDAGES

Dr. Alfred Murray discussed the variations in the ocular manifestations of hereditary and acquired syphilis, his remarks being illustrated by numerous stereopticon slides. Slides were projected on the screen showing cases of parenchymatous keratitis, the fundus changes of congenital syphilis, and Hutchinson's teeth, the incisors, canines and molars being mostly involved. Pictures of cases of interstitial keratitis, disseminated chorioiditis, chancre of the lip, chancre of the lid margin, gumma of the sclera, syphilitic iritis, with the ordinary symptoms showing synechiae usually developing in the second stage, condyloma of the iris, gumma of the iris located at the ciliary margin, neuroretinitis, choked disc, etc.

Dr. Geo. W. Hall, President of the Chicago Neurological Society, by invitation read a paper on "Syphilis of the Central Nervous System," with special reference to (a) spinal fluid, (b) reflexes, (c) ocular manifestations, (d) early diagnosis of parasyphilitic diseases, illustrated with the stereopticon.

Dr. George W. Hall referred to a case he presented before the Chicago Neurological Society about two years ago. The patient presented the Brown-Séquard syndrome the same as the patient shown to-night. That patient also showed an involvement of the cervical sympathetic due to a central lesion in the spinal cord and not to peripheral nerve involvement.

Within the past few months he has had the privilege of observing two cases of cervical rib in which there was involvement of the cervical sympathetic nerves. One case was operated on by Dr. Kanavel and showed a similar involvement to the patient exhibited to-night, affecting the sympathetic on the right side caused by pressure of the cervical rib. Since the operation the pupil has almost regained its normal size, and the narrowing of the palpebral fissure has disappeared and the patient is rapidly improving. The other case, one of Dr. Gill's operated on by Carl Davis, had a narrowing of the pupil with a slight narrowing of the palpebral fissure, and a paresis of the vocal cord upon the affected side.

Dr. Hall, after showing several slides of cases on syphilis of the nervous system, spoke briefly on the early points in the diagnosis of brain syphilis. He said that ptosis or involvement of the third nerve is found early in cases of brain syphilis, as the optic nerve and the third nerve are especially involved in syphilitic gummatous meningitis. When one sees such involvement of the third nerve or perhaps of the sixth coming on suddenly in adults, the first thing he thinks about is syphilis. In addition to that there may be general symptoms of tumor, such as nocturnal headaches, vomiting, dizziness, diplopia, etc., which accompany the presence of gumma in the brain. If, in addition to the ocular involvement and other symptoms of which the patient may complain, there is an increased number of lymphocytes in the cerebro-spinal fluid, as determined by

lumbar puncture, with the presence of globulin, with or without a specific history, we think immediately of the possibility of cerebrospinal syphilis. We do not expect to find the Argyll Robertson pupil in brain syphilis, although it may occur.

One of the early symptoms of tabes is a disturbance of the tactile sense across the chest in the region of the nipples and perhaps extending along the ulnar portion of the arms. The pathology of the disease, beginning as it does in the posterior root ganglion and extending into the dorsal columns of the cord, would explain the reasons for the early symptoms of tabes being sensory in character, such as bladder symptoms, lancinating pains, frequency of urination or slight dribbling of the urine early in the disease. The loss of knee-jerk for the same reason occurs early in cases of tabes. Another important sign is the so-called invisible ptosis, showing a transverse wrinkling of the frontalis muscle. The eye symptoms are early symptoms of tabes. In the absence of the Argyll Robertson pupil, there are three other conditions to be observed: first, the irregularity of the pupil; second, the inequality of the pupil, and third, a pupil reacting sluggishly to light. In an adult with a specific history, showing such a condition of the pupil, and with a history of periodical attacks of vomiting, gastric crises, we may think of an early tabes. Such symptoms, with loss of knee-jerk, or with a band of hypesthesia across the chest, such as we have mentioned, would speak strongly for the presence of tabes. Optic atrophy may be one of the early symptoms observed by the ophthalmologist. We could mention a great many such combinations which would lead to a diagnosis of tabes and which we very frequently see in our clinical work. Occasionally we get a complete internal ophthalmoplegia, but this is comparatively rare.

The diagnosis of general paresis sometimes depends on early eye symptoms. The Argyll Robertson pupil may be one of the first things to attract our attention in the diagnosis of parietic dementia. We find normal or increased knee-jerks in cases of general paresis unless we have a tabo-paralysis to deal with. If a patient shows increased irritability, as described by his wife, and has a tendency to loss of memory for business engagements, carelessness or peculiarity about his dress, associated with irregular, unequal and sluggish pupil, perhaps with exaggerated knee-jerks, with or without a specific history in previous years, it would cause us to think very strongly of its being a case of parietic dementia. If, in making the lumbar puncture, we find an increased number of lymphocytes in the spinal fluid, it would not be difficult to make such a diagnosis.

THE PRESENT SITUATION IN SYPHILIS

Dr. William Allen Pusey (by invitation) referred to the development of the arsenical chemotherapy, begun by Uhlenhuth, and carried forward so amazingly by Ehrlich by the introduction of salvarsan in 1909, and said that these fundamental discoveries constituted an epoch in the history of syphilis and produced a complete recasting of the methods of its management.

The great additions which had been made to the management of syphilis were: (1) Diagnosis by demonstration of the spirocheta pallida. (2) Diagnosis by the Wassermann reaction. (3) The use of the Wassermann reaction as a criterion of the effect of treatment. (4) Diagnosis by Noguchi's cutaneous reaction. (5) Prophylaxis by inoculation of 33 per cent. calomel ointment within a few hours after infection. (6) Treatment by salvarsan and its derivatives.

The man who had to do with the treatment of syphilis had never had a greater responsibility put upon him than existed in the question of the use of salvarsan in the treatment of his cases of syphilis. The claims for it had been so strong and the sponsors for it of such high authority that it had been no easy task to exercise restraint in giving one's patients the supposed benefits of it, and yet there were many considerations which made one hesitate at its administration in the heroic way which had been advocated and which raised serious questions concerning the sum total of its usefulness.

Salvarsan has proved less toxic than the organic arsenic compounds of which it was the successor, but it must be immediately said it had not been found the safe remedy that it was hoped to be. It had not proved to be wholly parasitotropic and free from dangerous organitropic and neurotropic qualities, to use more of the terms for which we were indebted to Ehrlich. On the contrary, it had been shown again that arsenic was still treacherous and that, combine it as we may, it was, when used in quantity, still dangerous. The minor disturbances from its use—fever, nausea, vomiting, diarrhea, prostration, headache, low blood-pressure, temporary cardiac disturbances, transitory albuminuria and the like—may be dismissed with brief courtesy. Some of them are important as suggesting contraindications to the drug, but they are of no practical importance in so serious a problem as the cure of syphilis.

There could be no two opinions as to the specific action of salvarsan on the active lesions of syphilis. It was a powerful symptomatic remedy. In rapidity of action it surpassed mercury or mercuric iodids in many lesions; in others it equaled or was inferior to these older remedies. In early syphilis it had a very quick effect on the initial lesion, mucous patches and condylomata. Its action was quick upon mucous membrane lesions generally. Its effect on the cutaneous eruptions was not more prompt and not more complete than that of mercury.

The abortive action of salvarsan in the primary period gave it a very valuable field of usefulness. About 40 per cent. of cases of initial lesion, which could be distinguished by the demonstration of the spirocheta pallida, showed a negative Wassermann for one or two weeks after the appearance of the lesions. In these cases there was a reasonable prospect that syphilis could be aborted, which justified a vigorous attempt with salvarsan. This made the early diagnosis of the initial lesion a matter of great importance.

After giving a very exhaustive review of the literature, Dr. Pusey summarized as follows: 1. Salvarsan has real dangers; they are remote, but when they occur, serious. 2. As far as can be deduced from our present knowledge, there is no reason to believe that salvarsan will lessen the occurrence of parasymphilitic nervous affections, and some ground for fear that it may predispose to them, except in those cases in which it cures the disease. 3. It is a powerful symptomatic remedy. 4. In cases in which vigorous treatment is begun before the generalization of the disease there is strong ground for believing that syphilis can be aborted. This possibly applies to a few early cases with secondaries. 5. In all other cases in the secondary period its curative use likely does more harm than good.

Dr. William E. Gamble said that during the last fifty years there have been gradually accumulated by the successive generations of ophthalmic surgeons definite clinical pictures in the inside of the eye which we know to be the result of syphilis, such as the plastic iritis with the yellowish nodules near the pupillary border, the fine sand-like hyalitis in young people in secondary syphilis, the diffuse retinitis and chorioiditis seen in the later stages of secondary syphilis, and in inherited syphilis the chorio-retinitis that we see in the periphery of the fundus. It has been by these and other clinical pictures that obscure cases of syphilis have been diagnosed.

Ophthalmologists are frequently called on to examine the fundus oculi of patients before using salvarsan and to make a report of the findings to the physician in charge. If these physicians would ask us to make a study of the fundus afterward, facts would be accumulated that would help us to solve this very important question. In the treatment of syphilis of the eye salvarsan has not displaced mercury. Where mercury and iodid of potassium fail, it fails. He refers especially to interstitial keratitis. The more or less real danger of arsenical poisoning resulting in damage to nerve tissue, and the added danger of intravenous injections, make many of us feel that the old methods of treatment of syphilis are in the main more safe and probably more reliable except in the first few days after infection.

WESLEY HAMILTON PECK, Secretary.

CRAWFORD COUNTY

The regular meeting of the Crawford County Medical Society was held in the Baptist church in Hutsonville, May 8. The meeting was called to order by the president at 2 p. m. As the meeting was open to the public the program was given first.

Mrs. J. W. Carlisle of Robinson read a paper entitled "Sex Hygiene." The paper was a very entertaining and valuable exponent of this important subject and was handled with the skill and delicacy which the subject demands. The discussion was general and was opened by Dr. Firebaugh, followed by both the physicians and laymen present, making a valuable addition to the paper.

The second paper, "Sanitation in Towns and Villages," was read by Dr. G. H. Henry of Oblong. This paper was also well prepared and interesting, dealing with the subject from a practical as well as a scientific standpoint. The discussion which followed was opened by Dr. Voorheis and indulged in generally by the various members.

The "Panama Canal" was the subject of the next paper. This was prepared by Dr. Firebaugh of Robinson, who had recently visited this interesting locality. He first gave a hasty review of the geographical location and formation of the isthmus, following this with a brief description of the two important cities, Colon and Panama, together with the customs, manners and habits of the native inhabitants. This was followed with a brief history of the various attempts made to dig a canal from the time of Balboa to the present successful undertaking by the United States. He next discussed the canal giving an idea of the magnitude of the work, both the digging and the no less important problem of sanitation.

There was no discussion of this paper and as this concluded the program, after a benediction had been pronounced by Rev. Mr. White, the audience was dismissed. The meeting was very successful from every standpoint and further meetings of a like nature will doubtless be held in the future.

The business meeting was called to order by the president and the minutes of the previous meeting were read and approved.

The following members were present: Drs. Martin, Illyes, Carlisle, Davis, Price, Newlin, Firebaugh, Kirk, Henry, Wilson, Brooks, Lindsay, H. N. Rafferty and Lowe.

The applications of Drs. G. C. Mohler of New Hebron, and E. M. Shipman of Hardinsville for membership in the Society were read and on motion, duly seconded, the rules of the Society were temporarily suspended and both applicants were unanimously elected to membership in the Crawford County Medical Society. It was moved, seconded and carried that the secretary write the senator and representatives of this district that the Crawford County Medical Society is heartily in favor of the "Good Roads Bill" being passed by the present legislature.

Moved and seconded that Dr. William Eaton of Hutsonville be made an honorary life member in the Crawford County Medical Society. This motion was unanimously carried. Adjourned.

A. LYMAN HOWE, Secretary.

CUMBERLAND COUNTY

The Cumberland County Medical Society met at Greenup, Monday, May 19, 1913, at 3 p. m.; with Dr. R. L. Kurtz in the chair.

After the regular business meeting, election of officers, etc., two very distinguished visitors arrived, viz.: Drs. John Green, Jr., of the Washington University, St. Louis, Mo., and Dr. E. B. Cooley, counselor for eighth district; both addressed the society. Dr. Green conducted an eye clinic until 6 p. m., which was very interesting and instructive. Dr. Cooley's remarks were well taken words of encouragement relative to cooperation and advancement of the county society, as well as the duty we owe towards the betterment of medical legislation by coming in close touch with our several legislators, etc., especially at this particular time.

The president, by unanimous vote of the society, instructed the secretary to express (to legislators of this district) the disapproval of the society of the house bills, now before the present legislature, known as the "Osteopathic" and "Optometry" bills, by wire, which was done.

The officers elected for the coming year were as follows: Dr. N. J. Baughton, Greenup, president; Dr. J. C. Brookhart, Greenup, vice-president; Dr. R. L. Kurtz, Neoga, secretary-treasurer; delegate, Dr. W. L. Smith, Toledo; alternate, Dr. R. L. Kurtz, Neoga; medicolegal committee, Dr. B. F. Zobrist, Jewett.

The unavoidable absence of Dr. J. L. Wiggins, East St. Louis, who was on the program for paper at afternoon meeting, was a great disappointment.

At 8 p. m. Dr. John Green delivered to the general public in the Opera House his popular lecture, illustrated by numerous stereopticon views, "The Relationship of Defective Eyesight to Backwardness in Children," which was listened to by a full house.

R. L. KURTZ, Secretary-Treasurer.

DE KALB COUNTY

The regular meeting of the DeKalb County Medical Society was held at Sandwich, April 25, 1913, at which the following program was given:

Meeting called to order at 10 a. m., at K. of P. Hall.

Regular business including election of officers.

Paper, "Acute Abdominal Affection." Allen B. Kanaval, M.D., Chicago.

Discussion of the subject by the Society.

Adjournment for dinner at the Presbyterian Church.

Meeting called again at 1:30 p. m.

Paper, "Cesarian Section." Gilbert Fitzpatrick, M.D., Chicago.

Discussion of the subject by the society.

EFFINGHAM COUNTY

The regular monthly meeting of the Effingham County Medical Society was held at the City Hall, Effingham, May 13, at 1:30. The meeting was opened by the president, Dr. Taphorn.

After considerable discussion a motion was made by Dr. Damron that our delegate go to the state convention without instruction as far as the question of medical defense fund was concerned. Motion seconded by Dr. Dunn.

Application of Dr. C. M. Doty, Mason, presented and accepted by the society.

Dr. Lewis Wine Bremermann, Chicago, gave a very interesting and instructive paper on "Tuberculosis of the Genito-Urinary Tract." This was followed by an open parliament which was entered into freely by the members present.

Dr. Brooks read correspondence and report of the legislative committee and moved that we as a society take a stand in opposition to the two measures before the legislature, i. e., House Bills No. 229-299, and that the secretary be instructed to communicate same to our representative. Seconded by Dr. Tope.

HENDERSON COUNTY

Annual meeting of the Henderson County Medical Society, held at Stronghurst, May 5, 1913, elected the following officers: president, Dr. H. L. Marshall; vice-president, Dr. A. E. Lauver; secretary-treasurer, Dr. J. P. Riggs; committee on public health, Drs. C. E. Kaufman, H. V. Prescott and J. P. Riggs; committee on medical defense, Dr. J. P. Riggs.

J. P. RIGGS, Secretary.

JASPER COUNTY

The Jasper County Medical Society held its regular monthly meeting at the Court House in Newton, on Friday, May 2, 1913. Dr. W. E. Franke, president, presided. After concluding a brief business session the members and visiting guests from Mattoon, Toledo, Greenup, Robinson, Oblong, Bone Gap and Effingham listened to a very earnest and scientific address by Dr. Lewis Wine Bremermann

of Chicago. The doctor is certainly a "live wire" on every detail of genito-urinary diseases and their medical and surgical treatment. In the evening Dr. Bremermann addressed a large public audience on the subject "What the Boy Should Know About Sex Hygiene." The earnest and rapt attention given the lecturer by the goodly sized audience present testified to the abilities of his skill as a public speaker on a subject that should be brought before the laity oftener than it is. Our county society expects to continue these meetings for the general public, arranging to have some prominent medical man give an address at stated intervals.

The society elected as delegate to the state society at Peoria, Dr. James P. Prestly, Newton, and Dr. Wm. E. Franke, Newton, as alternate.

JO DAVIESS COUNTY

The Jo Daviess County Medical Society met in Elizabeth, Ill., April 24, 1913, with the following present: Hoffman, Kaa, Renwick, Hillard, Bucknam, Nadig, Walker, J. M. Smith, I. C. Stafford, D. G. Smith, Fleege, Godfrey, Boots, Stillson, Keller, Miller, with Logan, Gollobith and Hagie as visitors.

The applications of R. E. Logan of Scales Mound and E. F. Gollobith of Hanover were voted on and the applicants elected to membership.

Dr. Hillard of Warren read a paper on "Some Haps and Mishaps in Obstetrics." This paper brought out many valuable points.

Dr. J. M. Walker of Dubuque favored us with a paper on "Epilepsy" in which he called attention to the fact that psychic impressions sometimes exert a beneficial influence on the disease and gave the history of six cases, four of which were partly demented, therefore not in a condition mentally to appreciate whatever psychic effect may have been induced by reason of the hypodermic injections and subsequent inflammation. He reviewed briefly the dosage made by administration and local reaction of erotalin.

All of these cases were of a severe grade of major epilepsy, suffering from two to twenty attacks a day. Five of the six were markedly benefited, one case not having been under treatment long enough to draw any conclusions; five of the cases have been under treatment for a year. He states: 1. That all other medicine was withdrawn at the time the first injection was given. 2. In five cases the character of the attacks has been modified as to the intensity and also become less frequent. 3. The mental state of all the cases has been benefited. 4. It is always advisable to change the site of the injection so as to obtain a good local reaction. 5. In view of Spangler's and Fackenheim's success with the drug he advises using it in all cases in which the ordinary remedies have failed.

Dr. C. L. Hoffman read a paper on "Intestinal Toxemia," which also added considerably to make this one of the best meetings scientifically as well as in attendance.

Adjourned to meet at Galena in July.

LA SALLE COUNTY

The LaSalle County Medical Society met in annual session in the city of Ottawa in the Supervisors' room on Tuesday, April 22, at 10 o'clock a. m.

Because of the unavoidable absence of President M. E. Blanchard, the meeting was called to order by Vice-President Roy Sexton. There were present during the meeting, Members Ensing, Leland, Etzbach, Pike, Clune, Hill, Wilson, Ayling, Roberts, Schoenneshoffer, Sexton, Weis, Geen, Parr, Cook, E. P. Landgraf, Quillin, Milligan, Laffoon, Burrows, Massman, Brower, Mosher, Parr, Pettit, Taylor, LaDue, Greaves, Guthrie, Fullenweider, Garlington, Palmer, Butterfield, Fread, Love, Lawry, and Essayists Eisendrath and Corwin.

The minutes of the previous meeting were read and approved. A number of applications for membership were received and referred to the Board of Censors. The chair appointed as temporary additional members of the board, Drs. Roberts and Perisho.

The secretary presented the following resolutions, which upon motion, were seconded and declared carried:

GOOD ROADS RESOLUTIONS

Resolved, That the LaSalle County Medical Society extend to the people of the state its hearty cooperation in their efforts to ameliorate, as soon as possible, this one of the many hardships to life in the rural districts, and which works a special hardship to the life of practitioners who have a rural clientele.

Be it further

Resolved, That the LaSalle County Medical Society indorse the platform of the Illinois Highway Association adopted at Peoria, Ill., Sept. 27, 1912. That we do everything within our power to assist the members of the General Assembly to put on the statute books of Illinois a good roads law. And be it further

Resolved, That these resolutions be published in the ILLINOIS MEDICAL JOURNAL, and that a copy of these resolutions be sent to every member of the Legislature from LaSalle county.

The secretary read a letter from President Nickerson of the State Society calling on the governor to appoint efficient men to the office of the State Board of Health, irrespective of political affiliations. This was discussed by Corwin and Ensign and was finally referred to Leland to draw up a resolution covering the same. The resolution is as follows:

OTTAWA, ILL., April 22, 1913.

WHEREAS, It being the sense of the LaSalle County Medical Society that the Illinois State Board of Health should be free from political activity and also independent of politics; and

WHEREAS, Secretary Egan having died and the terms of the present members of the State Board of Health having expired, and it being a convenient time to make such a change, therefore be it

Resolved, By the members of the LaSalle County Medical Society that Governor Dunne be requested and urged to appoint as members of the State Board of Health such men as are efficient and capable, irrespective of political affiliation, and who by virtue of their ability will give to the people of the state of Illinois a board that we may be proud of. And be it further

Resolved, That a copy of these resolutions be sent to Governor Dunne together with a letter from our secretary explaining our feeling in this matter.

The secretary read a letter from the Committee on Medical Legislation of the Illinois State Medical Society urging action to defeat the Optometry and Osteopathic bills now being considered by the judiciary committee of the legislature. After discussion it was moved by Ensign, seconded and carried, that the secretary be instructed to telegraph to Representative Browne to use his influence and utmost endeavor to defeat said bills.

The secretary read a letter from H. N. Moyer of the Medico-Legal Committee of the State Society anent increasing the per capita tax for the medical defense feature. The same was referred, upon motion, to our delegate for information and consideration.

The following resolutions were presented by Ensign, and on motion of Weis and seconded, the same were declared adopted.

WHEREAS, The commonwealth of Illinois has long since established an educational university and from time to time properly appropriated funds for its operation and maintenance, and

WHEREAS, Such university, while most creditable and efficient in its several departments of learning as already afforded, has continued incomplete, especially in that it has never been provided with a competent medical school as a component part of such institution, as might have been expected to exist in all universities of the kind and is already to be found in those of many other states, and notably among those immediately surrounding Illinois might be named Minnesota, Michigan, Iowa and Ohio, and

WHEREAS, A medical school of the highest rank with modern and up-to-date equipments for the advancement of knowledge of a character especially adapted to aid in the cure and prevention of disease and the prolongation of human life should be fostered by every state on behalf of the health, welfare and happiness of its citizens. Therefore be it

Resolved, That the members of the LaSalle County Medical Society, one of the oldest and among the largest of such county organizations in the state and now assembled at Ottawa, Ill., in annual meeting on the sixtieth anniversary of its year of organization, do most earnestly recommend that an appropriation of at least \$100,000 be annually set apart for the establishment of such a medical school as a much needed department of the State University, and that we will call on this county's representatives, Hon. H. W. Johnson, state senator, and Hon. O. E. Benson, L. O. Browne and W. M. Scanlan, state representatives, not only to vote for but to urge the passage of any measure likely to secure such an appropriation for the purpose of providing a suitable and complete medical department of the University of Illinois. And be it further

Resolved, That copies of these resolutions bearing the signatures of the officers and members of this society now in attendance be sent to each of the above named representatives of LaSalle county in the legislature of our state.

SIGNATURES

Name.	Residence.	Office of Membership
Roy Sexton	Streator	President
A. J. Roberts.....	Ottawa	Vice-President
E. W. Weis.....	Ottawa	Secretary-Treasurer
J. W. Pettit.....	Ottawa	Ex-Pres. I. S. M. S.
Wm. O. Ensign.....	Rutland	Ex-Pres. I. S. M. S.
J. S. Geen.....	Utica	Censor
Wm. Schoenneshoefer	Lostant	Censor
G. T. Love.....	Dana	Censor
F. C. Taylor.....	Peru	Member
F. A. Guthrie.....	LaSalle	Member
E. F. Milligan.....	Ottawa	Member
Ida M. Woolley.....	Streator	Member
E. K. Ayling.....	Tonica	Member
C. C. Lawry.....	Freedom	Member
T. W. Burrows.....	Ottawa	Member
H. C. Hill.....	Streator	Member
W. H. Jamieson.....	Ottawa	Member
J. W. Landgraf.....	Seneca	Member
V. Massman	Marseilles	Member
O. C. Yoder.....	Peru	Member
J. F. Etzbach.....	Utica	Member
R. W. Bower.....	Sheridan	Member
R. K. Leland.....	Utica	Member
Wm. B. McDonald.....	Mendota	Member
Geo. K. Wilson.....	Streator	Member
R. C. Fullenweider.....	LaSalle	Member
W. W. Greaves.....	LaSalle	Member
S. E. Parr.....	Ottawa	Member
E. P. Cook.....	Mendota	Member
Enos E. Palmer.....	Ottawa	Member
William E. Smith.....	Grand Ridge	Member
E. E. Perisbo.....	Streator	Member
W. A. Pike.....	Ottawa	Member
P. J. Clune.....	Ottawa	Member

The secretary presented the treasurer's report as follows:

Balance on hand one year ago.....	\$330.20
Amount collected during year.....	288.00
Total receipts	618.20
Disbursements	427.00
Balance in bank.....	\$191.20

The Board of Censors having examined the treasurer's books reported the same to be correct, and it was moved by Ensign, seconded and carried, that the report be adopted.

The chairman named as the nominating committee, Cook, Schoenneshoefer and Wilson.

The Board of Censors now reported favorably on the application of Drs. Lawrence Quillin, H. L. Rose, F. C. Taylor, W. B. McDonald and Edmund G. Sugg.

It was moved and carried that the secretary cast the ballot of the society for the election of those named. They were declared elected by the president.

The Board of Censors presented a supplemental report recommending the election of Fred L. Sickley of Lenore. The secretary cast the ballot of the society for him and he was declared elected.

The Board of Censors further reported not approving the applications of Drs. F. C. E. Schneider of Peru and C. J. Higinbotham of Streator. Upon motion the recommendation of the Board of Censors was concurred in and the applications declined.

After some considerable discussion on the subject of evening meetings, Dr. Schoenneshoefer moved that for the ensuing year there shall be two evening meetings, such as were held last year, and that the same committee on program—Weis, Perisho and Guthrie—be continued. Carried.

The attention of the society was now called by Burrows to the serious illness of Dr. G. G. Wilcox of Seneca, and it was moved and seconded that the secretary be instructed to write a letter of sympathy to the doctor. Carried.

The secretary now brought up the question of sending to our Honorary members the JOURNAL OF THE ILLINOIS STATE MEDICAL SOCIETY, when it was moved by Burrows that the Society obligate itself for the payment of the JOURNAL to the Honorary members. Carried.

Under the heading of the general discussions for the good of the Society, Burrows brought up the question of fee splitting. This led to an animated discussion in which Burrows, Ensign, Eisendrath, Corwin, Leland and Pettit participated. The sentiment finally arrived at seemed to be against any form of fee splitting that tintured in the slightest of secret division of fees or where there was a shadow of suspicion that a patient was being sold to the highest bidder. The further fact, however, was brought out that the medical man is not fully compensated for his devotion to his patient for making diagnosis, in assisting perhaps in the operation, in inducing the patient to submit to the operation and in assuming future responsibilities, at least, considerable responsibility in the result of such an operation. The ordinary fee that the medical man receives for such services is not sufficient. Where it is an understood matter that two or more physicians are engaged in the handling of cases requiring surgical interference for a stated price, then the further recognition by the consultant of the services of the medical man by a payment of more than the ordinary fee ought to be accepted.

It now being 2 o'clock the Society adjourned for dinner, being the guests of the Ottawa City Medical Society, and were entertained by an especially good dinner at the new Clifton Hotel, after which the Society reconvened.

The nominating committee made its report for the officers of the ensuing year as follows: President, Roy Sexton, Streator; vice-president, A. J. Roberts, Ottawa; secretary-treasurer, E. W. Weis, Ottawa; board of censors, William E. Schoenneshoefer, Lostant, G. T. Love, Dana, J. S. Green, Utica; medico-legal

committeeman, Edmund W. Weis, Ottawa; delegate to I. S. M. S., William O. Eusign; alternate delegate to I. S. M. S., W. Schoenmeschofer.

Place of the next semiannual meeting of the Society, Lostant, Ill.

It was moved by Cook that the report be adopted and on motion Cook was instructed to cast the vote of the Society for the officers named. He cast the ballot for the same and the president declared them elected.

The order of the program was changed somewhat and Daniel N. Eisendrath of Chicago presented his paper on "The Modern Method of Diagnosis in Disease of the Urinary Tract." In presenting this paper Dr. Eisendrath made use of the stereopticon, showing in practical and easy demonstration by pictures the various types of kidney, ureter and bladder tuberculosis, carcinoma, tumors and other conditions; also showing how palpation of the diseased kidney should be made. Also of the cystoscopy and catheterization of the ureters. The handsome illustrations used, both photographs and x-ray pictures, gave a very comprehensive and exact idea of the diagnosis of these various conditions. The Society was enthusiastic in the receipt of this paper and very grateful to Dr. Eisendrath for his presentation of the same.

Drs. Perisho and Smith now read their paper on "Extra-Uterine Pregnancy with Operation," submitting pathologic specimens. This paper was exhaustive in dealing with this condition, giving clinical cases showing where ruptured extra-pregnancy had been operated on in apparently moribund patients who made extraordinary and quick recovery after the operation. The paper was exceedingly good and right to the point, and called attention especially to the urgency of quick operation in these cases.

The time being short Dr. Guthrie, who had a paper on "Conservation of Hearing and Eyesight," kindly consented to allow his paper to go over until a future meeting.

Dr. Orr had a paper on "Ulcer of Duodenum; Results of Ten Gastro-Enterostomies" (Robison-Moynihan), not being present, although his paper had been sent to be read, the reading of the same was also postponed to a future meeting.

Dr. A. M. Corwin of Chicago read a paper on "Enucleation of Tonsils by the Sluder Tonsillotome." He showed the various instruments of the Sluder kind and many modifications thereof. Also how they ought to be used and what could be accomplished by their intelligent use. At the close of his paper the society adjourned to the operating room of the Ottawa City Hospital, where he demonstrated on three patients this method of enucleation. He removed six tonsils and two adenoid growths. This clinical demonstration to say the least, was most excellent. Those who were fortunate in being present were highly instructed and it was the consensus of opinion of all present that it is the most rapid and most thorough and complete of any method yet devised for the enucleation of the tonsil.

The thanks of the Society was tendered the essayists for their kindness in appearing before the meeting.

On motion the Society was declared adjourned.

E. W. WEIS, Secretary.

MACOUPIN COUNTY

The regular April meeting of the Macoupin County Medical Society was held in the Masonic Hall, at Staunton, April 22, 1913. The meeting was called to order by the president, Dr. F. W. Morgan. The following members and visitors were present: Drs. V. G. Cowen, R. E. Bley, Jr., L. H. Corr, L. H. Denny, J. N. English, Ben Hudson, C. D. King, E. S. Milton, J. W. Morgan, E. S. Motley, J. S. Patterson, T. H. Hall, E. B. Hobson, F. B. Van Wormer, W. C. Van Wormer, J. P. Matthews, W. L. McBrien, J. J. Link, St. Louis; T. C. Marion, C. S. Ambrose, E. R. Van Meter, C. H. Hunter.

After the reading of a communication regarding defense fund, society instructed delegate as to the member's wish in this matter.

The Board of Censors reported favorably on the applications of Dr. Blunk, Virden, and Dr. R. E. Bley, Jr., Bunker Hill.

These gentlemen were elected to membership. Eight other applications were presented for action at next meeting.

Virden was selected as the place for the July meeting.

The following officers were elected: president, T. H. Hall, Gillespie; vice-president, E. S. Motley, Virden; secretary, C. D. King, Gillespie; delegate, J. P. Matthews, Carlinville; alternate, E. S. Motley, Virden.

In the afternoon Dr. J. J. Link, St. Louis, read a paper on "Myeloma." After describing the pathology, usual places of growth, and reviewing the literature concerning this rather rare neoplasm, the doctor described at length three cases that came under his observation.

CASE 1.—Female, aged 17 years, came with diagnosis of rheumatism in right knee. On examination I found enlargement of lower end of femur and characteristic egg shell crepitus of one-third circumference of lower third of thigh, and immediately an operation was performed. About one-third of lower end of femur was destroyed. Impossible to save limb so amputation was done. Thus another useful individual was left a cripple as the result of the tendency of physicians to treat all painful ailments of knee-joint for rheumatism.

CASE 2.—Boy, aged 16 years. Myeloma at upper end of tibia. This was easily enucleated and there remained a sound wall which bounded the growth. Four years have elapsed and no return.

CASE 3.—Male, 18 years. Enlargement at mid-point of ulna on right arm, a very unusual situation. The growth was easily removed; 18 months have elapsed and no return.

Dr. Van Meter, Staunton, then read a very useful paper on "Acute Frontal Sinusitis." After giving a description of the disease the doctor described his method of treatment: First, rest in bed in darkened room, purgatives, etc., and palliative which consists in relief of pain, drainage, etc. The doctor's plan for drainage is to pass a small bent catheter, or better, a probe, through the naso-frontal duct, into the sinus and thereby establish at least a temporary drainage. This may have to be repeated once or oftener. This operation is often difficult and requires patience on part of operator and patient too. Sometimes it is necessary to remove part of middle turbinate. Saline douches, ice caps, etc., are useful aids. If, because of granulations or otherwise, this procedure is not effective, the radical operation must be done.

In conclusion Dr. Matthews, Carlinville, and Dr. Hunter, Staunton, gave verbal case reports which led to much discussion.

MADISON COUNTY

More than forty ladies and gentlemen attended the second annual banquet of the Madison County Medical Society at the Illini Hotel in Alton, May 1. The banquet was one of the most pretentious of the season. A special bill of fare had been arranged by Manager Baker of the hotel and the supper was as fine as indicated by the cards. After each item of food on the menu cards was an appropriate quotation.

Dr. Mather Pfeifferberger, president, was toastmaster. Dr. G. Taphorn responded to the toast "Our Ladies," and Dr. R. S. Barnsback of Edwardsville responded to "The Humorous Side of Medical Practice."

The guest of honor, who made the principal address, was Dr. H. M. Whelpley, dean of the St. Louis School of Pharmacy, who proved to be a charming entertainer.

Those present were: Dr. L. G. Burroughs and wife, and Dr. J. H. Siegel and wife of Collinsville; Dr. Fred Wade Jones and mother, Mrs. E. O. Jones, Dr. and Mrs. E. A. Cook, Dr. and Mrs. E. F. Fischer, Dr. and Mrs. J. B. Hastings, Dr. W. H. Halliburton, Dr. M. Pfeifferberger and Dr. G. Taphorn, all of Alton;

Dr. and Mrs. E. C. Ferguson, Dr. and Mrs. R. S. Barnsback, Dr. and Mrs. E. W. Fiegenbaum, Dr. J. R. Sutter, Jr. and mother, Mrs. J. R. Sutter, all of Edwardsville; Dr. and Mrs. W. H. C. Smith, Dr. I. J. Beard and Miss Lillian Turner of Godfrey; Dr. W. W. Everett and the Misses Bertha and Lucille Everett of Highland; Dr. and Mrs. R. B. Scott of Venice; Dr. and Mrs. Chas. R. Kiser, of Madison; Dr. E. C. Spitze of Edwardsville, and Dr. H. W. Hand of Granite City.
E. W. FIEGENBAUM, Secretary.

MADISON AND ST. CLAIR COUNTIES

A joint meeting of the Madison and St. Clair County Medical Societies was held in Collinsville, a central point, on April 3, and was attended by nearly sixty doctors, the number from each society being about equal. After a short business session of each society Dr. Zimmerman, St. Clair County, and Dr. Pfeiffenberger, Madison County, as presiding officers of their respective societies, both presided over a joint session of the two bodies, at which Dr. H. S. Crossen, St. Louis, read a paper highly instructive and valuable but too comprehensive to admit of detailed comment in these columns. Dr. Crossen did not need any great introduction to his audience as he is well known in both counties in his capacity of author, teacher and operator. Suffice it to say that his hearers were delighted and instructed by his address and freely entered into lively discussion. After the meeting those present heartily enjoyed a tasty lunch that was served by the proprietor of the Renfrow Hotel.

MASON COUNTY.

The regular meeting of the Mason County Medical Society was held in the K. P. Club Rooms, Mason City, April 31, 1913. The meeting was called to order by Dr. H. O. Rogier, Mason City.

On account of Dr. Garrison moving to Chicago and Dr. Burnham moving to Peoria the offices of president and vice-president are left vacant. Dr. Rogier was elected president and Dr. F. G. Morrill, Havana, was elected vice-president to serve the unexpired term.

The society next listened to the program of the evening. Dr. Gillespie, Peoria, read a most interesting paper on "The Use of the Cystoscope." Dr. Gillespie being an expert on bladder and kidney diseases gave a most interesting account of the part the cystoscope took in treatment and diagnosis in diseases of these organs.

The society was unanimous in thanking Dr. Gillespie for his valuable paper.

Dr. Oliver, secretary of the Peoria Medical Society, was also a guest of the society.

The last paper was presented by Dr. F. G. Morrill, Havana, and consisting of reports on cases, which was most interesting and instructive to all.

The society elected Drs. W. R. Grant and O. B. Grant, Easton, as delegates to the state society to be held at Peoria, May 20-22. The society adjourned and selected Easton as the next place for the quarterly meeting, July 7.

Those present were: Drs. Rogier, Cargill, Minnick, Schuette, Spear, Mason City; Dr. Paul, Forest City; Dr. Morrill, Havana; Drs. W. R. and O. P. Grant and Dr. Hanson, Easton; Drs. Gillespie and Oliver, Peoria.

MONTGOMERY COUNTY

The Montgomery County Medical Society held its monthly meeting April 22, at Hillsboro. Judge John L. Dryer addressed the society. He briefly reviewed the legal rights and limitations of the profession and called our attention to some unjust legislation. Much interest was manifested in his remarks and many questions were asked at the conclusion. Incidentally his Honor had some nice things to say about our organization. The matter of the reorganization of the medicolegal fund of the state society was discussed at considerable length. It

was moved and seconded that our delegate to the state society be instructed to support the plan of assessing each member \$10 for the medical defense protection. Unanimously carried.

A letter from President Nickerson regarding the appointment of the State Board of Health was read and discussed. It was moved and seconded that a committee be appointed by the president to prepare resolutions to present to Governor Dunne, urging that the new board of health be constructed along the lines of President Nickerson's suggestions. Motion carried.

A letter from President-Elect Whalen seeking support of the society for the good roads movement was read. It was moved and seconded that the secretary be instructed to indorse this measure. Carried.

OGLE COUNTY

The regular monthly meeting of the Ogle County Medical Society was held at the supervisor's room at Oregon, Wednesday, April 16, 1913. The meeting was called to order promptly at 1 p. m. by the president, Dr. S. D. Houston. Minutes of the previous meeting were read by the secretary and adopted. The following members were present: Drs. Akins, Beveridge, Brown, Brigham, Griffin, Hedberg, Houston, Kettler, Kretsinger, Roe and Sheets. Visiting friends were: Drs. Lewis Wine Bremermann, Chicago; Daniel Lichty, Rockford; E. S. Murphy, Dixon; George E. Bushnell, Rochelle; W. W. Hanes, Mount Morris; Singer, Milwaukee; B. A. Cotton and S. W. Crass, Chicago.

The applications of Drs. Frank Crowell, Rochelle; W. B. Donaldson, Polo; Robert S. Johnson, Rochelle; Walter E. Kittler, Rochelle; C. J. Price, Mount Morris; J. B. Roe, Oregon, and Robert E. Stevens, Rochelle, were presented to the society for membership. On favorable report by the censors the applicants were unanimously elected to full membership.

A resolution for good roads was favored and the secretary was instructed to write to the members of the general assembly to put on the statute books of Illinois a good roads law endorsing the platform of the Illinois Highway Association adopted at Peoria, Ill., Sept. 27, 1912. Motion made by Dr. Kretsinger that the next regular meeting be held at Rochelle. Carried.

Dr. Lewis Wine Bremermann, Chicago, read a very interesting paper on "The Preoperative, Operative and Postoperative Treatment of Prostatic Hypertrophy." The doctor in a clear precise manner presented his subject which was appreciated by all present. An animated discussion followed by Drs. Beveridge, Murphy, Roe and Sheets and Dr. Bremermann to close.

Dr. Daniel Lichty, Rockford, read a scientific paper on "The Care and Treatment of the Adolescent's Circulatory Apparatus as Prophylactic of Arteriosclerosis." Dr. Lichty gave in a lengthy discussion his own free and unbiased ideas of the causes and treatment of arteriosclerosis. This paper was well received and brought about an interesting discussion by Drs. Bremermann, Beveridge, Brown, Crass and Murphy.

Dr. Singer, the state organizer, gave a short talk on the needs of building up associations. The doctor deserves a great deal of credit from the society, for it was through his hard labors that he was instrumental in adding so many new members to the society. Dr. Bremermann, Lichty and Murphy were voted honorary members of the society. Dr. Beveridge moved that we extend our thanks and appreciation to the essayists, visiting and new members, which was carried by a rising vote.

Owing to lack of time Dr. Beveridge's paper was postponed to next meeting. This closed one of the best meetings we ever held.

No farther business, the meeting adjourned to meet at Rochelle the third Wednesday in May, 1913.

PIKE COUNTY

The annual meeting of the Pike County Medical Society was held at Pittsfield, April 24, 1913. Fifteen members were present and ten new members were taken in. Our total number now is forty-three.

Dr. S. B. Peacock, Pittsfield, was elected president; Dr. F. M. Thurmon, Pearl, vice-president; Dr. H. T. Duffield, Pittsfield, secretary; Dr. G. U. McComas, New Canton, delegate.

Dr. G. E. Baxter of Chicago read a paper on "The Importance of Certain Infectious Diseases in Children, Especially of the Tonsils and Postnasal Region." This was instructive, entertaining and up to date and well received by our members and well discussed afterwards.

Dr. C. E. Black, Jacksonville, reported several unusual clinical cases and discussed society matters in general.

Several clinical cases were present and presented to the members for examination.

A vote of thanks was offered Drs. Baxter and Black for their efforts in our behalf.

STARK COUNTY

The Stark County Medical Society met in annual session May 9, 1913, at Toulon, when the following officers were elected: president, L. M. Linker, Elmira; vice-president, M. T. Ward, Toulon; secretary-treasurer, Clyde Berfield, Toulon; medicolegal, W. L. Garrison, West Jersey; censors, Drs. Ward, Berfield and Buffum; delegate, E. B. Paeker, Toulon.

Six new members were admitted to membership.

WASHINGTON COUNTY

The Washington County Medical Society met in regular session in the County Court Room, May 8, with the following members present: president, C. J. Sanders; vice-president, A. Schmidt; secretary, S. P. Schroeder; treasurer, J. J. Troutt; J. F. White, T. F. McConaghie, L. P. Schroeder, L. A. Heely, R. A. Goodner, W. D. Carter, P. B. Rabenneck, C. Eirich and R. B. Jack.

Officers for the current year were elected as follows: president, H. Schmidt, Addieville; vice-president, J. J. Troutt, Nashville; secretary-treasurer, P. B. Rabenneck, Nashville; delegate, R. A. Goodner; alternate, C. J. Sanders.

Dr. C. J. Sanders gave an interesting paper on a series of "Diphtheria Cases"; a discussion followed by a number of members.

Dr. P. B. Rabenneck read a paper on "Vaccine Therapy."

The future meetings of the society will be held in the office of the Bridget Hughes Hospital in Nashville.

WINNEBAGO COUNTY

The Winnebago County Medical Society held its May meeting the 13th at the Nelson Hotel, Rockford, with Dr. Emil Lofgren in the chair.

The minutes of the previous meetings were read and approved. The following program was given:

Dr. D. W. Day, Rockford, spoke on "School Inspection in Rockford." The doctor told of more pleasant workings with the physicians and parents and the advantages to each in having the diseased conditions in pupils pointed out.

Dr. W. E. Park read a paper on "The Prevention of Spread of Contagious Diseases."

The president was asked to appoint a committee of three whose duty it shall be to pass on the quality of certified milk prepared and sold in Rockford.

NEWS OF THE STATE

NEWS ITEMS

—R. L. Lundry, a minister of the gospel and illegal practitioner of medicine, appeared on the 22d day of March, 1913, in the court of Justice E. O. Neman, pleaded guilty to practicing as a physician without a state certificate, was fined \$100 and costs amounting to \$116, which was paid, and case dismissed.

—The following officers were elected at a conference of the Illinois State Hospital Association, held at Elgin, April 25: President, Dr. Eugene Cohen, Peoria; vice-president, Dr. Hiram Smith, Chicago; secretary, Dr. Thomas Foster, Anna. The next meeting will be held at Jacksonville State Hospital in July. Thirty-two doctors were present from all parts of the state.

—The Board of Directors of the Chicago Municipal Tuberculosis Sanitarium have recently reorganized by the election of Dr. Theodore B. Sachs, president, and Dr. George B. Young, secretary. This reorganization was necessitated by the vacancy in the office of president caused by the resignation of Mr. Harlow N. Higginbotham, and the recent appointment by Mayor Harrison of Mr. W. A. Wieboldt as the third member of the Board.

—*Ruskin on Doctors' Fees.*—The problem of the doctor and his fee was admirably stated by Ruskin in his "Crown of Wild Olive." Writing of doctors, he said: "They like fees, no doubt—ought to like them—yet if they are brave and well educated the entire object of their lives is not fees. They, on the whole, desire to cure the sick and—if they are good doctors and the choice were fairly put to them—would rather cure their patient and lose their fee than kill him and get it. And so with all other brave and rightly trained men their work is first, their fee second—very important always, but still second."—*London Standard*.

—The Riverview Medical Association, which comprises doctors of the territory between Dundee, Serena, Hinsdale and Earlville, met in Aurora, April 24, in semi-annual session, and after dinner adjourned to the Hotel Bishop, where papers of a very interesting character were read. The Association will meet again in Aurora the fourth Thursday of October. The subjects of the papers and those reading them were as follows: "Diet in Old Age," Dr. Sara M. Hobson, Chicago; "Asthma," Dr. A. H. Gordon, Chicago; "Bed Sores and Varicose Uleers," Dr. Paul Rudolf, Hinsdale; "Differential Diagnosis Between Duodenal and Gastric Ulcer, and Gall-Bladder Diseases," Dr. Peter S. Clark, Chicago. The officers of the Association are: President, Dr. Safford, Serena; secretary, Dr. Ward, Elgin.

—The Sarah Morris Hospital for Children, Twenty-Ninth Street and Groveland Avenue, Chicago, was formally opened Sunday, May 25. Tuesday, May 27, it was open for inspection to the medical profession. The new institution is said to be one of the most completely equipped in the country, and was erected with the \$300,000 gift left by the late Mrs. Sarah Morris. The hospital has 125 beds. Large porches and sun parlors form one of the features of the building. These overlook the lake and are so constructed that the little patients may be rolled into the open air in their sick-beds. There is also a kindergarten for convalescent children and a gymnasium for those rounding back into health. The attending staff of the Children's Department of Michael Reese Hospital will be the attending staff at the new hospital — Drs. I. A. Abt, Ernest Lackner and Julius Hess. Following her husband's death, Mrs. Morris gave \$250,000 for establishing the Nelson Morris Memorial Institute for Medical Research in connection with the Michael Reese Hospital.

PERSONALS

Dr. B. Barker Beeson of Chicago has sailed for Paris, where he will take a six months' post-graduate course.

Dr. Thomas A. Woodruff has moved his office to 808 Chicago Savings Bank Building, 7 West Madison Street, Chicago.

Dr. W. C. Bridge of Elgin, has gone to England to visit relatives and will study for a short time in the London hospitals.

Dr. J. E. Lee was re-elected Mayor of Venice and Dr. Malfred Hamm was elected to the village board of Madison, at the recent municipal election.

Dr. Nathan Holmes of Delavan was the victim of a painful auto accident recently; he was severely bruised and wrenched his back and hips.

Dr. Maximilian Meinhardt will assume personal charge of the Lakeside Hospital, which is to be known as the Lakeshore Hospital at the expiration of Dr. A. R. Johnstone's present lease, August 31, 1913.

Dr. F. N. Cloyd and daughter of Westville, were painfully injured when their auto was thrown into a ditch. A large dog dashed in front of the car, dishing one of the wheels and throwing the auto into a ditch. Dr. Cloyd sustained a wrenched shoulder and a sprained arm.

REMOVALS

Dr. M. Harris has removed from Harrisburg to Equality, Ill.

Dr. J. E. D. Silcox has removed from Rio, Ill., to Keysport, N. J.

Dr. Elizabeth Dunn has removed from 1154 Fifty-Sixth Street, Chicago, to Morris, Ind.

Dr. A. E. Schoch has removed from 1039 N. Clark Street, Chicago, to Strasburger, Neb.

Dr. Charles V. Martin of 3901 Cottage Grove Avenue, Chicago, has removed to Marysville, Mo.

Dr. M. H. Worthington of 6332 Woodlawn Avenue, Chicago, has removed to 414 Laughlin Building, Los Angeles, Cal.

PUBLIC HEALTH

—The universal interest in the treatment of tuberculosis, both from the personal and public health standpoints, has lately been stimulated by the announcement of two alleged specifics which have been investigated by the United State Public Health Service. For the benefit of those of our readers who do not have access to the original publication we quote in full from *Public Health Reports* of May 16, 1913, as follows:

THE FRIEDMANN TREATMENT FOR TUBERCULOSIS

A REPORT ON THE PRESENT STATUS OF ITS INVESTIGATION BY A BOARD OF OFFICERS
OF THE PUBLIC HEALTH SERVICE

In November, 1912, Dr. F. F. Friedmann, of Berlin, reported before the medical society of that city a new method of treatment for tuberculosis, consisting of injections with what he described as living, avirulent tubercle bacilli. In the discussion following his paper a number of scientists, whose opinion was regarded as carrying weight, supported in greater or less degree his contentions that curative effects were derived from this method of treatment. On theoretical grounds, the treatment of tuberculosis by living, avirulent tubercle bacilli, if such could be secured, had been regarded as the most hopeful line along which work could be carried, and for this reason, and because of the measure of support which had been given to Dr. Friedmann's methods, the interest of the Public Health Service was attracted to the subject.

The number and source of inquiries received from the most diverse parts of the country showed that this interest was being widely shared and, to a large extent, had been stimulated by wide-spread publicity through newspapers and other publications.

It being one of the duties of the Public Health Service to investigate the diseases of man and their methods of control, correspondence was entered into through the Department of State to ascertain whether Dr. Friedmann would submit details of preparation and administration of his remedy and its effects on patients to representatives of the Public Health Service; and if so, under what conditions.

In correspondence, Dr. Friedmann expressed a willingness to place at the disposal of such investigators all the facts at his command and afford them every aid to prepare a "comprehensive and impartial report."

Before arrangements could be completed to send an officer to Berlin advices were received through the State Department that Dr. Friedmann was preparing to transfer his activities to the United States, and notification of the date of his sailing was received through the same source. Preparations were accordingly made to meet Dr. Friedmann on his arrival with a view to taking advantage of his expressed willingness to have an investigation made of his remedy; and a board was appointed, consisting of Surg. John F. Anderson and Passed Asst. Surg. Arthur M. Stimson, to carry on the work.

At its first interview with Dr. Friedmann the board ascertained that he was not willing to reveal all the details of his methods, contrary to the offer contained in his previous correspondence. He willingly furnished a culture of the organism, however, which he stated was used in the preparation of his remedy, but declined to divulge the method of its use in the preparation of the remedy, and he would

not make any definite statement as to the antecedents of the culture in question. He imposed, as a condition to finally furnishing detailed information regarding the methods of preparation of his remedy, a recognition by the board of favorable results from the use of the remedy on patients. He specifically disclaimed that his culture was possessed of either curative or immunizing properties against tuberculosis in the lower animals, but had no objection to an investigation of his claim that it was completely avirulent to them. He agreed to administer the remedy to patients for purposes of observation by us of its effect on them and to give them such subsequent treatments as, in his opinion, were necessary to effect a cure.

The board, in effect, found that under the conditions mentioned it would have opportunity only to study a culture of the bacteria said to be used in some way by Dr. Friedmann in the preparation of his treatment, to test its pathogenicity on the lower animals, and to observe the effect of treatment by him of tuberculous patients with his finished remedy.

It will be recognized, of course, that such an arrangement was not satisfactory from a scientific standpoint; but, in view of the great importance of the matter to tuberculous patients throughout the country and in the hope that a valuable remedy might have at last been found, not only to cure tuberculous patients but to prevent the disease, the conditions imposed by Dr. Friedmann were accepted. An additional reason for taking advantage of opportunities to make every study possible was the assurance, by Dr. Friedmann, of its harmlessness when injected into human beings.

Arrangements were accordingly made with the staffs of Mount Sinai Hospital, Bellevue Hospital, the Montefiore Home, and Seton Hospital, whereby patients would be placed at the disposal of Dr. Friedmann for purposes of treatment. The thorough cooperation of these authorities has been had during the course of the observations, and it is a pleasure to acknowledge publicly their great courtesy. Practically all the patients in question had, for some time, been resident in these hospitals, were under the care of their visiting staffs, and our observations were made conjointly with those authorities; and, with their valuable assistance, the investigations have been undertaken and conducted in an impartial manner. The reticence and attitude of Dr. Friedmann have in no way been allowed to interfere with our judgment of the effects as observed by us.

Considerable delay has been experienced in the treatment of cases on account of the repeated absence of Dr. Friedmann from New York, the first patients having received their first injection March 9 and the last of them their first treatment April 6. In all, ninety-four patients had received the first injection up to April 15, when it became necessary to inform Dr. Friedmann that on account of the halting progress in the demonstration the board was forced to limit its studies to these patients. Dr. Friedmann was also informed that in the interest of the demonstration these patients should be seen by him with a view of giving such additional injections of his remedy as might, in his judgment, be necessary to effect a cure. Up to the present time five of these patients have received a second injection.

On account of the enormous number of inquiries regarding the remedy, and the statements in newspapers purporting to be expressions of opinion of the board of officers as to its value, a statement was made in the *Public Health Reports* on March 21, 1913, to the effect that considerable time would necessarily be required to carry out the investigations; that no opinion had been expressed one way or the other, and that in the meantime the public was informed of the inadvisability of tuberculosis patients traveling long distances in the hope of receiving the treatment. This latter information was furnished on account of the hardships and disappointments suffered by those who had traveled to New York in the hope of receiving treatment.

We believe that at the present time we are not in a position to express an opinion based on the present condition of patients under observation. The disease for which the remedy is used is prolonged, and is characterized by periods of advancement and retrogression; it is also one in which psychic influences are a

powerful factor. Time is, therefore, necessary in order to properly evaluate the effect of therapeutic measures.

We must not lose sight of the possible therapeutic value of this preparation and, on the other hand, it is necessary to guard against too great an optimism in respect to its merits. Without presenting in detail the condition of patients under observation we are in a position to state that the effects thus far observed do not justify that confidence in the remedy which has been inspired by wide-spread publicity. In our opinion harm may have been done by this undue publicity in so far as it has lessened the confidence of tuberculous persons in well-recognized methods of treatment or interrupted their use, and we are constrained to advise against any lessening of those well-known measures which not only have effected cures but which have reduced the incidence of the disease.

We are aware that Dr. Friedmann does not wish to be judged scientifically on newspaper statements, and he would undoubtedly disclaim responsibility for certain of those which have appeared. Nevertheless, it is on those that the public bases its opinion until replaced by reliable and unbiased scientific pronouncements supported by convincing data.

In the published address before the Berlin Medical Society Dr. Friedmann stated that the intramuscular injection was the standard or "sovereign" method of administering his treatment, but that it offered some difficulties, which were overcome by the combined or simultaneous intravenous and intramuscular method. The chief difficulty seems to have been that in certain individuals the "normal" local reaction (consisting of the development of an infiltrate from the size of a nut to that of an apple, which becomes gradually resorbed), either fails to develop any palpable induration whatever, or the infiltrate breaks down in the form of a discharging abscess. According to his article the course to pursue seems to be, in the first instance, to repeat injections at long intervals until the development of "hypersusceptibility" causes the formation of an ideal infiltrate, or, in the second instance, to refrain entirely from further treatment for a prolonged period, since "further injections will only subject the patient to more abscesses without doing him any good."

Cases of this kind, therefore, would apparently be in need of treatment, according to Dr. Friedmann's ideas, for a long period of time. In our series of patients, Dr. Friedmann has almost exclusively made use of the intramuscular method alone in pulmonary cases and a very considerable proportion of them have either developed no considerable infiltrate at all or have suffered from abscess formation. It is evident, therefore, that a very considerable proportion of these patients may expect their treatment at the hands of Dr. Friedmann to extend over a prolonged period.

Concerning the culture submitted to us, we may state that a series of experiments is under way. The bacillus has been found to be an acid-fast organism, having properties quite different from those of any tubercle bacillus with which we are acquainted. It appears to be identical with an organism cultivated from a few loopfuls of the material used for injection which Dr. Friedmann permitted us to place on culture media in his presence. We requested Dr. Friedmann to furnish us with a larger amount of this material for examination, but this he has declined to do. We can state, however, that living acid-fast bacteria are being injected by the intramuscular and intravenous method, although we are ignorant of what medium they are suspended in or what additional substance or substances may be contained in the final mixture.

JOHN F. ANDERSON, *Chairman of the Board.*
A. M. STIMSON, *Recorder.*

The other alleged specific which has recently acquired much publicity is the Duket treatment. This is said to have been reported on by Dr. Cobb, Surgeon in charge of the Marine Hospital in Chicago, whose preliminary report was suppressed by Secretary of the Treasury McAdoo. Just why it was not published as was the Friedmann report is a matter

of conjecture. Possibly the influences which caused the investigation to be undertaken were powerful enough to suppress an unfavorable report. *The Journal A. M. A.*, in its articles about Duket, May 10 and May 24, evidently goes on the principle that an arrant quack who has swindled numerous victims unto death with a fake remedy is not likely to become the greatest benefactor of mankind as his promoters fondly hope (?)

Still another tuberculosis cure—not as yet investigated by the Public Health Service—emanates from a Chicago faker, one Bannerman, an ex-veterinarian, according to the *Journal A. M. A.*, of May 31. Bannerman claims that he tried his remedy on the lower animals, which recalls a ditty used many years ago to advertise a certain liniment, “good for man or beast.” The following verse appeared on posters under the picture of an ape who was rubbing some liniment on his leg:

“If I am Darwin’s grandpapa
It follows, don’t you see.
That what is good for man and beast
Is doubly good for me.”

All three of these geniuses are ostensibly trying to do the public good. Whether the emphasis should be put on the *do* is the all-important question.

MARRIAGES

HAROLD L. ROSE, M.D., Ogelsby, Ill., to Miss Lena Penning of Chicago, April 29.

HENRY ISAAC LEVITON, M.D., Chicago, to Miss Theresa Lurkin of California, recently.

ROBERT DORLAND PAUL, M.D., Chicago, to Miss Ethel Erickson of Tacoma, Wash., April 28.

JOSEPH SAMUEL COHN, M.D., Chicago, to Miss Mamie Bishkow, both of Chicago, April 6.

MAURICE A. LOEBEL, M.D., Chicago, to Miss Jessie J. Marshall of Seneca, Ill., in Chicago, April 26.

DEATHS

EDDY BERT, M.D., University of Goettingen, Germany, 1864; for many years a member of the American Medical Association; died at his home in Chicago, May 8; aged 72 years.

JOHN H. GRADY, M.D., University of Louisville, Ky., 1868; formerly of Columbia, Ky.; a Confederate veteran; died at the home of his daughter in Quincy, Ill., April 22; aged 70 years.

GARARD FORDYCE, M.D., a veteran of the Civil War and for several years a practitioner of Livingston County, Ill., died at his home in Ancona, February 10, from uremia; aged 78 years.

ERASMUS DARWIN LOING, M.D., College of Physicians and Surgeons, Keokuk, Ia., 1882; of Belvidere, Ill., formerly of Brandon, Fla., died in the Elgin State Hospital, April 14, from arteriosclerosis; aged 80 years.

JAMES RICHARD HULL, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1880; for twenty-seven years a practitioner of Good Hope, Ill.; died at St. Anthony's Hospital, Rock Island, Ill., March 27, from nephritis; aged 52 years.

GEORGE THOMAS CARSON, M.D., Rush Medical College, 1896; a member of the American Medical Association; superintendent of the Chatsworth (Ill.) Sanatorium; died at his home in that city, April 26, from pneumonia; aged 52 years.

GEORGE L. STUBINGER, M.D., Chicago Homeopathic College, 1892; National Medical University, Chicago, 1894; formerly of Kewanee, Ill., but for the last three years a practitioner of Watts, Okla., was burned to death in a hotel fire in that place, April 6.

JAMES H. JUDSON, M.D. (license years of practice, Illinois, 1882), a practitioner for forty-seven years; assistant surgeon of the 142d Illinois Volunteer Infantry during the Civil War; for many years supervisor and school director of his district; died at his home near Polo, April 28; aged 73 years.

SAMUEL WILLARD, M.D. (license Illinois), surgeon of the 97th Volunteer Infantry during the Civil War; founder and first librarian of the Springfield Public Library and superintendent of city schools; from 1890 to 1897 teacher of history in the West Division High School, Chicago; died at his home in Chicago, February 9, from senile debility; aged 91 years.

Book Notices

W. B. SAUNDERS COMPANY, publishers, of Philadelphia and London, have issued another edition (17th) of their handsome illustrated catalogue.

In going through this edition we find it describes nine new books and ten new editions, not described in the previous issue. These new books are of great interest to the medical man, because they treat of subjects being daily discussed in medical circles. Any physician can get a copy of the Saunders' catalogue by dropping a line to these publishers. A copy should have a place on the desk of every physician, because it is most valuable as a reference work of modern medical literature. Send to Saunders to-day for a copy.

THE MODERN HOSPITAL; ITS INSPIRATION; ITS ARCHITECTURE; ITS EQUIPMENT; ITS OPERATION. By John A. Hornsby, M.D., Secretary Hospital Section, American Medical Association; Member American Hospital Association, etc., and Richard E. Schmidt, Architect, Fellow American Institute of Architects. Octavo volume of 644 pages with 207 illustrations. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$7.00 net; half morocco, \$8.50 net.

The Modern Hospital is a remarkable work in that it is probably the first effort to supply the demand for advice in hospital construction and administration. Dr. Hornsby has been superintendent for many years of a modern general hospital and is thoroughly conversant with the many problems which arise in such a trying position. Mr. Schmidt has also had a wide experience in hospital construction and has ideas which will be found of immense service. While the sun parlor is considered and recommended, we believe that the subject of heliotherapy deserves still more space than it is given. No corporation, association or individual should think of undertaking the building and management of a hospital without first consulting this excellent work.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M.D., at Mery Hospital, Chicago. Volume II. Number II. (April, 1913.) Octavo of 171 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Published Bimonthly. Price, per year, paper, \$8.00; cloth, \$12.00.

The April issue of Dr. Murphy's Clinics is in many particulars the most valuable production up to this time, because of the large number of subjects considered and the valuable diagnostic points brought out in the histories and discussions. Mr. Milne of London contributes valuable remarks on gastric ulcer and bone surgery. No one pretending to keep in touch with surgical thoughts of the day can afford to be without Dr. Murphy's Clinics.

GOLDEN RULES OF DIAGNOSIS AND TREATMENT OF DISEASES. By Henry A. Cables, B.S., M.D., Professor of Medicine and Clinical Medicine of the College of Physicians and Surgeons; Consultant at Jefferson Hospital; formerly house physician at Alexian Brothers' Hospital, St. Louis. Second Edition. Revised and Rewritten. C. V. Mosby Company, St. Louis.

Dr. Cable, who is now located at St. Louis, has prepared a small work of 318 pages filled with good advice and valuable hints in the diagnosis and treatment of diseases. The price, \$2.25, is such as to place it within the reach of every practitioner and it gives points which are not to be found in any work coming under our observation.

THE NARCOTIC DRUG DISEASES AND ALLIED AILMENTS; PATHOLOGY, PATHOGENESIS AND TREATMENT. By George E. Pettey, M.D., Memphis, Tenn., member Memphis and Shelby County Medical Society, Tennessee State Medical Association, American Medical Association, Tri-State Medical Association of Mississippi, Arkansas and Tennessee; also Mississippi Valley Medical Association, Southern Medical Association and the American Society for the Study of Alcohol and Narcotic Diseases. F. A. Davis Company, Publishers, Philadelphia. Price, \$5.00 net.

Dr. Pettey has been a tower of strength in the ethics of treatment of these diseases which has too much been handed over to charlatans and grafters. There is no reason why the general practitioner should not keep track of his patients and with the assistance of Dr. Pettey's book give them better treatment than they have usually received from the numerous institutions and asylums scattered over the country. Dr. Pettey's book is sane and safe, and should be widely read.

VACCINE AND SERUM THERAPY. By Edwin Henry Schorer, B.S., M.D., D.P.H. Formerly Assistant Thomas Wilson Sanitarium for Children, Mt. Wilson, Md.; Assistant Rockefeller Institute for Medical Research, New York City, and at one time member of the faculty of the University of Missouri, of the University of Kansas, and the Department of Preventive Medicine and Hygiene of Harvard University. Second Revised Edition. C. V. Mosby Company, St. Louis, Mo. Price, \$3.00.

Dr. Schorer of Kansas City, Mo., who has had an exceptionally good training for the work of this sort, has been most conservative in his statements and the work can be recommended to the general practitioner as strictly reliable and up to date. As he says: "Vaccine and serum therapy offer such great hopes as specific remedial agents that the profession must be informed about them. The physician should have enough knowledge to enable him to decide when vaccines or sera should be given and what results are to be expected from their use.

"Before deciding on the value of the specific vaccine or serum it must be remembered that many infectious diseases are self-limited in their course. While there may be those who will differ to some extent from the methods of diagnosis and specific therapy given in this work, an effort has been made here to present the subject concisely and fairly and in such a manner as to be of the most assistance to the practitioner."

Certainly the treatment of modern therapy has been on the lines indicated by Dr. Schorer in his book.

